

c.d.
AC 4473
PUBLIC HEALTH
DIVISION



County Borough of Sunderland.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

For the Year

1933.



COUNTY BOROUGH OF SUNDERLAND.

REPORT

ON THE

Health and Sanitary Administration

OF THE BOROUGH

FOR THE YEAR 1933.

BY

A. STUART HEBBLETHWAITE,

M.C., M.B., Ch.B., D.P.H.,

Medical Officer of Health.

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HEALTH COMMITTEE.

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„ Sir W. RAINE, Kt., J.P.	„ J. POLLOCK.
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„ R. C. F. CROW.	„ J. W. SCOTT.
„ H. HEEDE.	„ J. TURNER.
„ J. W. HOLYOAK.	„ F. WILSON, J.P.

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Mrs. BELL, J.P.	„ LOW.
„ BARTRAM.	„ MUNDELLA.
„ CAIRNS.	„ NICHOLSON.
„ COMMON.	„ RICHARDSON.
„ HORAN.	„ WILSON.

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Councillor G. LUMSDEN, J.P.	„ J. W. SCOTT.
Mrs. F. DAWSON.	Mrs. J. H. MOUNSEY.
„ B. HUNTER.	„ L. MUNDELLA.

TUBERCULOUS CATTLE.

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„ J. W. HOLYOAK.	„ G. B. SCOTT.
„ G. LUMSDEN, J.P.	„ J. W. SCOTT.
„ J. POLLOCK.	„ J. TURNER.
„ S. H. POTTS.	

PUBLIC HEALTH STAFF.

Medical Officer of Health, Chief Tuberculosis Officer, Chief Administrative Officer to the Municipal Hospital & Medical Superintendent of the Borough and Grindon Sanatoria.	A. STUART HEBBLETHWAITE, M.C., M.B., Ch.B., D.P.H.
Deputy Medical Officer of Health ...	EUSTACE THORP, O.B.E., M.B., B.Ch., D.P.H.
Assistant Medical Officer of Health for Maternity & Child Welfare.	DOROTHY M. TAYLOR, M.D., D.P.H.
Clinical Tuberculosis Officer	JOHN REGINALD BEAL, M.D., M.R.C.S., D.P.H.
Venereal Diseases Officer	NOEL F. ROWSTRON, M.D., M.R.C.S., L.R.C.P. (Lond.).
Borough Bacteriologist & Pathologist	HY. ANSTEY COOKSON, M.B., Ch.B., F.R.C.S., D.P.H.
Borough Analyst	JOHN T. DUNN, D.Sc., F.I.O.
Veterinary Surgeon	THOMAS M. MITCHELL, M.R.C.V.S.
Chief Sanitary Inspector	CHARLES BROUGHTON, Cert. R.S.I. (ROGER LEE retired March, 1933).
Principal Clerk	JAMES W. SOLLEY.
Special Inspectors (1 Factories and Workshops; 1 Food, Drugs, and Dairies; 2 Meat; 2 Housing; and 1 Drainage)...	... .. 7
District Sanitary Inspectors ... ..	... .. 8
Rat Catcher ... ..	... .. 1
Removal and Disinfecting Staff ... ..	... .. 3
Senior Health Visitor and Inspector of Midwives ... ..	... .. 1
District Health Visitors ... ..	... .. 13
Sister, Light Treatment Centre...	... .. 1
Clerical Staff ... ..	... .. 8
K. V. MILBURN, M.D., M.R.C.S., G. F. ROBINSON, M.A., M.B., M.R.C.S., A. AYRE SMITH, M.D., M.R.C.S., A. T. WOODWARD, M.B.,	} Rota of Doctors at Maternity Home.

MUNICIPAL HOSPITAL.

RESIDENT MEDICAL STAFF.

Medical Superintendent	C. RUSSELL CORFIELD, B.Sc., M.D., L.M.S.S.A., D.T.M.
Deputy Medical Superintendent ...	ETHEL BROWELL, M.B., B.S.

PUBLIC HEALTH STAFF.

MUNICIPAL HOSPITAL—(Continued):—

Assistant Medical Officer & House Surgeon. EDNA T. EVERDELL, M.B., B.S.

VISITING MEDICAL STAFF.

Physician	...	...	...	...	G. F. WALKER, M.D., M.R.C.P.
Surgeons	...	...	...	...	STANLEY RAW, M.D., F.R.C.S STANLEY RITSON, M.B., M.S., B.Sc., F.R.C.S., L.R.C.P.
Dental Surgeon	...	...	...	...	D. POLLOCK, L.D.S.
Matron	...	...	...	...	Miss L. O. CHAPMAN.
Assistant Matron & Sister Tutor...					Miss S. I. AYRE.
Steward	...	...	...	...	Mrs. F. EVERDELL.

1 Clerk, and a Nursing Staff of 98.

Borough Sanatorium (Matron (Miss M. M. O'Kane), 1 Assistant Matron, 31 Nurses, 2 Clerks, 22 Female Servants, 1 Engineer, 5 Labourers, and 1 Lodgekeeper) ...	63
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Grindon Sanatorium (2 Sisters, 10 Nurses, 1 Teacher, 7 Female Servants, 1 Handyman, and 6 Gardeners) ...	27
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Sunderland Maternity Home (Matron (Miss J. Gibson), Deputy Matron, 7 Nurses (including 3 Pupils), 6 Domestic Staff) ...	15
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Tuberculosis Dispensary :—

Nurses	2
Clerks	2
Caretaker	1

Vaccination Officer CHARLES R. CLARK.

Public Vaccinators :—

Dr. A. MACKINTOSH.	Dr. T. D. MILLER.
Dr. W. GIBB.	Dr. T. DICKEY.
Dr. J. B. ANDERSON	Dr. J. GILLAN.

COUNTY BOROUGH OF SUNDERLAND.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH COMMITTEE.

ALDERMAN MRS. BELL AND GENTLEMEN,

The year 1933 may be regarded as one of a fine Summer in the midst of a continued industrial depression. The unexpectedly prolonged periods of warm weather was greatly appreciated and I was most impressed by the sight, day by day, of those people, unfortunately unemployed and having much enforced leisure, spending their time on the beach at Seaburn, bathing and sun-bathing, and getting as much physical benefit from the air and sun as possible. There is no better method of toning up the system.

Those who did not benefit from the hot weather were the babies because, as is shewn in detail in the Report, the hot Summer was associated with an increase in the death-rate among babies from Infantile Diarrhoea.

The birth-rate is the lowest on record for the Borough and my observations on birth control, which are contained in the Report, may upset the susceptibilities of its protagonists. My own observations are based upon consideration of the problem as of national as well as of local significance.

The infant mortality continues to fall slightly compared with the two previous years but maternal mortality shows a slight increase. Although statistics based on small numbers can be deceptive, it is to be regretted that maternal deaths still occur.

As regards Infectious Diseases, the principal ones demanding attention throughout the year have been Measles and Scarlet Fever.

It will be seen that the Hospital for Infectious Diseases has been overtaxed and overcrowded, due to the fact that there has been no additions made to this Hospital since its inception in 1890, in spite of the fact that the population had increased in 1927 by over 20,000. An additional Ward to this Hospital is urgently required and is mentioned in the Report.

There is very little to report upon the question of Tuberculosis, except to repeat, as in all my previous reports, that additional Sanatorium accommodation is urgently required.

The development of the Municipal Hospital has continued and the demands upon its services will require additional accommodation.

The production of milk has throughout the year received careful attention from my Inspectors and it is now at a very high standard of cleanliness. Special efforts have been made by your Department to abolish the unhygienic and illegal practice of filling bottles in the streets, these bottles being obtained from door steps after exposure to numerous methods of contamination. In spite of the publicity given and the successful legal action taken in this matter, the practice continues, and until the punishment is made more severe, will not be stopped.

In connection with Maternity and Child Welfare, I should like to refer to the excellent work which has been carried out at the Maternity Home in connection with young children suffering from mal-nutrition. These cases are seen at the Infant Welfare Centres by the Medical Officers in charge and referred to the Maternity Home for corrections of diet and general methods of rearing. The benefit from this treatment, especially when the children were able to be in the open air, has been remarkable.

The question of nutrition has been debated in Committees and ventilated in the press. It is a subject about which not too much is known and about which wrong conclusions are very often drawn, either from insufficient knowledge or lack of scientific training. The report contains a section on nutrition in connection with limited incomes and conclusions drawn as to whether those limited incomes are expended in the most sensible way.

The subject of Housing has more to record than in previous years. Clearance Areas on both sides of the water have been dealt with, following upon an Inquiry by the Ministry of Health which resulted in 87 out of 88 houses being confirmed as unhealthy. The re-housing of these people has created a new public health problem in connection with the prevention of the infestation of new Council houses. The methods taken to prevent this infestation is dealt with in the Section on Housing.

I have to express my appreciation of the loyalty and devotion to duty of all members of my staff and to all members of the Health Committee for their courtesy extended to me at all times.

I am,

Your obedient servant,

A. STUART HEBBLETHWAITE.

Public Health Department,

Sunderland,

April, 1934.

SUMMARY,

1933.

LATITUDE 54° 55' North. LONGITUDE 1 23' West.

AVERAGE HEIGHT ABOVE SEA LEVEL, 130 feet.

AREA OF THE BOROUGH (in acres)	6,299
POPULATION	187,400
ESTIMATED NUMBER OF HOUSES	31,586
RATEABLE VALUE	£860,222
SUM REPRESENTED BY A PENNY RATE	£3,350

	Previous ten-yearly Average.	
	1923-	1932.
	1933.	
BIRTH-RATE (births per 1,000 living)	19·8	23·3
DEATH-RATE (deaths per 1,000 living)... ..	13·5	14·3
NATURAL INCREASE OF POPULATION (Excess of births over deaths in the year).	1,164	1,542
INFANT MORTALITY RATE (Deaths under 1 year per 1,000 births).	89	98
DEATH-RATE from Pneumonia and Bronchitis ...	1·6	2·7
„ „ Cancer	1·4	1·2
„ „ Diarrhoea & Enteritis (under 2 years) per 1,000 births	19·4	16·3

	Cases.	Case-	Deaths.	Death-
	nil.	rate.	nil.	rate.
SMALL-POX	nil.	...	nil.	...
SCARLET FEVER	1,518	8·09	26	0·14
DIPHTHERIA	73	0·39	3	0·02
TYPHOID FEVER	7	0·04	1	0·01
PULMONARY TUBERCULOSIS ...	289	1·54	183	0·97
OTHER FORMS OF TUBERCULOSIS	186	0·99	39	0·21

COUNTY BOROUGH OF SUNDERLAND.

STATISTICS AND SOCIAL CONDITIONS.

Area.—The area of the Borough is 6,299 acres, exclusive of foreshore and tidal waters.

Population.—The population at the Census taken on the 26th April, 1931, was 185,824, viz., 89,623 males and 96,201 females.

The Registrar-General's estimate of the population of the Borough for mid-year 1933 is 187,400.

Rateable Value.—The rateable value of the Borough in 1933 was £860,222 and the sum represented by a penny rate £3,350.

Principal Industries.—The principal industries of the Borough are ship building, engine building and coal mining. The trade of the Borough again suffered considerable depression during the year and the figures of unemployment showed no improvement. During such times it is a matter of extreme importance to the health of the town as a whole that the social services controlled by the Council are maintained at the highest standard of efficiency.

VITAL STATISTICS.

Births.—The number of births registered in the Borough during the year was 3,801, comprising 1,884 males and 1,917 females. Of these, 65 males and 54 females were born to parents belonging to districts outside the Borough, and have therefore been deducted from the total, whilst to the total have been added 15 males and 6 females, born outside the Borough but belonging to Sunderland parents, making a net total of **3,703**, made up of 1,834 males and 1,869 females. Compared with the figures for the previous year, this is a decrease of 225 males and 54 females or a total decrease of 279.

The birth-rate corresponding to the net total of children born was **19.8**, which is a decrease in the rate of 1.6 on the previous year and the lowest on record for the Borough.

It is important to record that although the number of births exceeded the number of deaths by 1,164, yet the Registrar-General's estimate of the population for the mid-year 1933 is 800 less than for the corresponding period of 1932.

Further, the birth-rate has fallen from 25.9 in 1924 to 19.8 in 1933.

The population of the Borough is falling in spite of the excess of births over deaths.

The question arises in my mind as to whether, in view of these serious statistics, we are justified in supporting voluntary birth control clinics.

Birth control information is justified on medical grounds and can be obtained at either the Council's Infant Welfare Centres or the Women's Departments of the Voluntary and Municipal Hospitals.

Is it justified on the grounds of: (1) overcrowding; (2) finance; and (3) lack of employment?

The reply to these questions can be summed up in a general statement that to solve a problem it is not advisable to create other problems.

Critics at this stage may compare the birth-rate of 9.0 in Thornhill Ward with the birth-rate of 27.9 in East Ward and make the unfair and uncharitable statement that breeding takes place at the wrong end of the social scale. If those critics were to place the children born in East Ward in the environment, and with the facilities, of Thornhill Ward, they would have little about which to complain and the Borough would not be faced with a declining population.

Contraceptive methods as taught at voluntary control clinics necessitate a certain amount of intelligent co-operation of the women attending. This intelligence is not likely to be found among the type of woman who has not sufficient self-control as personally to limit the size of her own family.

We have not at present sufficient definite information as to the dangers, physically and psychologically, which the continued use of contraceptive methods produce; but we are aware of the fact that after prolonged contraceptive methods have been employed, sterility may ensue and it is a tremendous responsibility to undertake a practice which may result in a fall in the birth-rate greater than has yet been experienced owing to the large and increasing proportion of sterile women in the population.

If and when there is another call for men as in the last war, it would be a fatal position to be found in—a nation depleted in man power.

I would suggest that an outlet to the various activities of the members of such voluntarily birth control clinics could more profitably be found in such measures, for instance, as are necessary for the sterilisation of the unfit.

BIRTH-RATE.

Year.				No. of Births.	Birth-Rate, SUNDERLAND	Birth-Rate, England and Wales.
1911—1915	...	...	...	23,470	31·0	23·6
1916—1920	...	...	...	21,083	26·8	20·1
1921—1925	...	...	...	22,043	26·9	19·9
1926—1930	...	...	...	20,027	23·0	16·8
1924	...	...	...	4,285	25·9	18·8
1925	...	...	...	4,106	24·7	18·3
1926	...	...	...	3,830	23·4	17·8
1927	...	...	...	3,646	22·4	16·7
1928	...	...	...	4,198	23·6	16·7
1929	...	...	...	4,111	22·3	16·3
1930	...	...	...	4,242	23·1	16·3
1931	...	...	...	4,087	21·8	15·8
1932	...	...	...	3,982	21·4	15·3
1933	...	...	...	3,703	19·8	14·4

On reference to the table on page 16, it will be seen that East, Sunderland, and Central Wards had the highest birth-rates and Thornhill, Fulwell and West Wards the lowest.

Details respecting notifications of births and visits paid by health visitors are given on page 117.

Illegitimate Births.—Of the 3,703 net births registered 3,567 (1,773 males, 1,794 females) or 96·3 per cent, were legitimate and 136 (61 males, 75 females) or 3·7 per cent. illegitimate. The ratio of illegitimate to legitimate was 1 to 26.

BIRTHS AND BIRTH-RATES IN WARDS.

MUNICIPAL WARD.	Estimated Population, 1933	No. Births	Birth- Rate.	Illegiti- mate Births	Percentage of Illegitimate Births to total Births.
Bishopwearmouth.....	10,008	193	19·3	13	6·7
Bridge.....	11,706	266	22·7	9	3·4
Central.....	7,553	204	27·0	14	6·9
Colliery.....	8,462	177	20·9	4	2·2
Deptford.....	9,618	187	19·4	9	4·8
East.....	8,706	243	27·9	5	2·1
Fulwell.....	6,327	77	12·1	2	2·6
Hendon.....	11,010	224	20·3	8	3·6
Monkwearmouth.....	7,371	183	24·8	7	3·8
Monkwearmouth-Shore.	9,685	223	23·0	5	2·2
Pallion.....	13,901	306	22·0	5	1·6
Park.....	10,251	213	20·8	10	4·7
Roker.....	10,181	151	14·8	6	3·9
St. Michael's.....	9,826	174	17·7	6	3·4
Southwick.....	16,556	354	21·4	13	3·7
Sunderland.....	9,490	247	26·0	12	4·9
Thornhill.....	15,968	143	9·0	2	1·4
West.....	10,781	138	12·8	6	4·3
BOROUGH.....	187,400	3,703	19·8	136	3·7

Deaths.—In 1933, 2,774 deaths (1,439 males and 1,335 females) were registered as having occurred in the Borough. To that number must be added 52 deaths of persons (17 males and 35 females) belonging to Sunderland who died outside, and from it must be deducted 287 deaths of persons (177 males and 110 females) belonging to places outside the Borough who died in Sunderland, giving a net total of **2,539** Sunderland deaths made up of 1,279 males and 1,260 females. These figures correspond to a gross death-rate of 14.8 and a net death-rate of **13.5**, compared with 14.9 and 13.7 respectively for the previous year.

Compared with England & Wales as a whole, the Sunderland death-rate was 1.2 in excess.

DEATH-RATES IN QUARTERS.

Year.	I.	II.	III.	IV.	Year.
1924	19.5	13.0	13.0	14.6	15.0
1925	16.3	16.2	13.8	14.8	15.3
1926	15.2	13.9	11.3	14.8	13.8
1927	17.9	13.3	10.7	13.3	13.8
1928	15.4	12.9	11.6	13.9	13.5
1929	26.5	15.5	12.5	13.7	17.0
1930	16.5	13.5	10.1	13.8	13.5
1931	19.6	14.3	10.4	13.1	14.4
1932	16.8	13.7	10.6	13.9	13.7
1933	17.5	13.2	11.3	11.9	13.5

Death-rates in Wards.—Central, East and Sunderland Wards had the highest death-rates. Sunderland and Central Wards are the most congested wards of the Borough, having 162.2 and 111.9 persons per acre compared with 29.5 persons per acre for the whole Borough.

DEATHS AND DEATH-RATE IN WARDS.

MUNICIPAL WARD.	Estimated Population, 1933.	Net Deaths.	Death- Rate.
Bishopwearmouth.....	10,008	129	12.9
Bridge.....	11,706	179	15.3
Central.....	7,553	143	18.9
Colliery.....	8,462	98	11.6
Deptford.....	9,618	137	14.2
East.....	8,706	149	17.1
Fulwell.....	6,327	73	11.5
Hendon.....	11,010	137	12.4
Monkwearmouth.....	7,371	95	12.9
Monkwearmouth-Shore.	9,585	118	12.2
Pallion.....	13,901	159	11.4
Park.....	10,251	168	16.4
Roker.....	10,181	126	12.4
St. Michael's.....	9,826	149	15.2
Southwick.....	16,556	174	10.5
Sunderland.....	9,490	161	17.0
Thornhill.....	15,968	210	13.2
West.....	10,781	134	12.4
	187,400	2,539	13.5

ANNUAL DEATHS AND DEATH-RATE.

Year.	Population.	Nett Deaths.	Death-Rate, SUNDERLAND	Death-Rate, England and Wales.
1903	147,206	2,970	20·1	15·5
1904	147,710	2,935	19·8	16·3
1905	148,216	2,853	19·2	15·3
1906	148,725	2,858	19·2	15·5
1907	149,234	2,973	19·9	15·1
1908	149,746	2,754	18·3	14·8
1909	150,259	2,763	18·3	14·6
1910	150,774	2,548	16·9	13·5
1911	151,291	2,704	17·8	14·6
1912	151,835	2,425	15·9	13·3
1913	152,380	2,769	18·1	13·8
1914	152,931	2,610	17·0	14·0
1915	148,273	2,938	19·8	15·7
1916	145,277	2,671	18·4	14·4
1917	141,765	2,590	18·2	14·4
1918	144,119	3,458	24·0	17·6
1919	149,263	2,676	17·9	13·7
1920	155,211	2,487	16·0	12·4
1921	161,100	2,473	15·3	12·1
1922	162,900	2,555	15·7	12·8
1923	164,000	2,270	13·8	11·6
1924	165,100	2,486	15·0	12·2
1925	166,000	2,538	15·3	12·2
1926	163,800	2,262	13·8	11·6
1927	162,700	2,255	13·8	12·3
1928	184,700	2,402	13·5	11·7
1929	184,000	3,128	17·0	13·4
1930	184,000	2,485	13·5	11·6
1931	187,600	2,701	14·4	12·3
1932	188,200	2,576	13·7	12·0
1933	187,400	2,539	13·5	12·3

Causes of Death. The principal causes of death were, in order of numerical importance, heart diseases, cancer, tuberculosis and pneumonia.

Heart diseases take first place in the list of killing diseases, there being 595 deaths from this cause compared with 600 in the previous year; 93 per cent. of these deaths occurred in persons over the age of 45 years.

Cancer again occupies second place in the list of killing diseases, 257 deaths having occurred from this disease compared with 249 for the previous year.

Tuberculosis, all forms, again taking third place accounted for 222 deaths, a decrease of 9 compared with 1932. See also pages 87 et seq.

Pneumonia occupies fourth place in the list of killing diseases, 161 deaths having occurred from this cause, a decrease of 53 on the previous year.

Influenza. The deaths from influenza were 89, an increase of 5 on the previous year.

PRINCIPAL CAUSES OF DEATH.

PRINCIPAL CAUSES OF DEATH IN THE VARIOUS WARDS OF THE BOROUGH.

Death Rate	Diseases.	Number of deaths (nett) in 1933.			Increase or decrease compared with 1932.	Bishopwearmouth.	Bridge.	Central.	Colliery.	Deptford.	East.	Fulwell.	Hendon.	Monkwearmouth.	Monkwearmouth Shore.	Pallion.	Park.	Roker.	St. Michael's.	Southwick.	Sunderland.	Thornhill.	West.
		M	F	Total.																			
0·005	Enteric Fever and Paratyphoid Fever	1	...	1	- 2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
...	Smallpox	...	...	...	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
0·11	Measles	12	11	23	+ 17	...	...	...	...	...	2	1	...	1	...	...	...	...	2	...	3	...	...
0·14	Scarlet Fever	14	12	26	+ 14	...	4	...	...	3	1	...	...	1	...	...	3	4	1	1	2	...	2
0·02	Whooping Cough	1	3	4	- 28	...	3	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
0·02	Diphtheria	2	1	3	-	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
0·47	Influenza	50	39	89	+ 5	...	4	...	...	4	3	...	7	...	5	7	1	...	...	...	9	...	...
0·04	Encephalitis Lethargica	4	4	8	- 1	...	...	...	...	...	...	...	...	...	...	...	6	3	8	3	...	...	5
0·04	Cerebro-Spinal Meningitis	17	14	31	- 5	...	2	...	...	...	4	...	3	...	1	...	1	...	...	...	4	...	...
0·97	Pulmonary Tuberculosis	95	88	183	- 9	...	16	13	1	7	9	4	13	6	9	13	15	9	12	14	19	6	1
0·21	Other Tuberculous Diseases	19	20	39	- 18	...	3	2	3	5	1	2	2	1	1	4	1	...	3	...	2	2	3
1·37	Cancer, Malignant Disease...	131	126	257	+ 8	...	16	11	15	14	14	10	8	6	6	15	19	20	11	15	16	27	19
0·09	Rheumatic Fever	7	11	18	.....	...	3	1	2	2	...	...	2	6	1	2	...	...	...	2	1	1	...
0·11	Diabetes	12	11	23	- 2	...	1	...	2	...	1	...	...	...	...	...	2	...	4	...	...	...	...
0·62	Cerebral Hæmorrhage, &c.	40	77	117	+ 18	...	4	...	3	8	4	3	9	...	...	...	4	2	10	...	4	18	...
3·17	Heart Diseases	283	312	595	- 5	...	33	27	28	32	35	25	26	23	34	37	39	39	41	36	26	55	36
0·71	Bronchitis	67	67	134	- 22	...	8	11	3	9	6	3	10	5	4	4	9	7	7	5	13	10	10
0·86	Pneumonia (all forms)	94	67	161	- 53	...	12	18	3	8	11	5	7	6	14	11	7	4	6	13	14	8	3
0·08	Other Respiratory Diseases	8	7	15	- 7	...	3	...	...	1	...	...	1	...	...	...	1	1	3	...	2	2	...
0·08	Ulcer of Stomach or Duodenum	14	2	16	+ 3	...	3	...	...	1	1	...	1	...	...	...	...	...	...	...	...	2	...
0·41	Diarrhoea, &c.	48	30	78	+ 21	...	6	...	...	5	13	...	5	4	6	3	5	2	2	5	4	1	2
0·05	Appendicitis and Typhlitis...	7	3	10	- 1	...	...	1	1	...	...	...	1	...	...	...	...	2	1	1	1	1	...
0·06	Cirrrosis and other diseases of liver	2	10	12	+ 5	...	...	1	1	...	...	...	1	...	1	...	...	2	...	...	...	...	...
0·69	Acute and Chronic Nephritis	68	61	129	+ 30	...	10	4	7	8	6	3	4	5	6	5	10	6	6	12	7	15	9
0·06	Puerperal Sepsis	...	12	12	.....	...	1	...	...	1	1	1	...	1	...	1	1	1	...	1	1	1	...
0·05	Other Accidents and Diseases of Pregnancy and Parturition	...	10	10	+ 2	...	2	1	1	...	...	...	...	...	...	...	2	...	...	2	...	1	...
0·74	Congenital Debility, Malformations, Premature Birth, &c.	66	74	140	- 20	...	7	7	10	7	7	2	6	8	7	...	10	...	...	15	9	14	4
0·14	Suicide	20	6	26	+ 1	...	3	1	...	1	2	2	1	2	6	2	3	3	8	1	1	...	...
0·54	Other Deaths from Violence	57	45	102	+ 4	...	10	4	...	4	8	4	4	6	5	5	9	...	5	10	7	...	...
1·45	Other Defined Diseases	138	135	273	- 12	...	23	14	3	15	20	2	23	12	2	16	17	17	16	24	16	28	11
0·02	Causes Ill-Defined or Unknown	2	2	4	+ 4	...	...	...	...	...	...	...	1	...	1	2	..	...	...	...	...	...	...
13·5	TOTALS	1,279	1,260	2,539	- 37	129	179	143	98	137	149	73	137	95	118	159	168	126	149	174	161	210	134

SANITARY CIRCUMSTANCES.

Water.—No important alterations or extensions of the water supply to the Borough have been carried out during the year under review. This water, which is derived from deep wells (200-500 feet deep) in the magnesium limestone, continues to prove satisfactory.

It is interesting to record, from information received from the Sunderland and South Shields Water Company, that although a considerable amount of the country suffered from a severe drought during the Summer, the levels in the various wells in connection with the supply of water for the Borough did not fall to any appreciable extent.

Rivers and Streams.—No action has been taken for the prevention of pollution of the river Wear which takes the effluent from 12 sewers. It should be understood that the river Wear, being a tidal river and taking sewage, little can be done to mitigate or prevent pollution.

Drainage and Sewerage.—Sewers to a total length of 2.66 miles have been completed. The relaying of old and defective sewers has also been effected by the Borough Surveyor wherever this procedure was considered necessary. During the year 2,460 feet of cast-iron drains and 8,747 feet of stoneware drains have been laid, and new cast-iron soil and ventilation pipes to the extent of 2,142 feet have also been fixed. The outfalls of the sewers at Roker are above water at low tide; not only that, but the condition of the pipes themselves is so deplorable that gross sewerage pollution of the beach takes place daily.

If Roker is to be advertised as a seaside resort the sands must be made cleaner.

Closet Accommodation.—During the year 1 privy has been abolished and replaced with a wash-down water-closet, and 220 broken or otherwise defective water-closet basins were replaced with new wash-down pedestal basins.

Below will be found a table showing the conveniences in the Borough at the end of 1933:—

Houses with waterclosets and movable ashbins.....	30,568
„ „ slop or waste waterclosets	2
„ „ ashpits, privies and ashpits, pan privies, etc.	91*

*These are not within a reasonable distance from a sewer.

Scavenging.—The amount of refuse removed during the year was 105,422 tons. The arrangement for the removal of house refuse remains efficient, the whole of the removal being carried out by means of closed carts, many of which are motor driven.

The present methods of disposal of house refuse are by land tipping and by removal to sea.

In order that a refuse tip may be run without any cause for complaint, each load should be covered with earth as it is tipped; no refuse should be left exposed at any time; and no persons should be allowed to have access to the tip for the purpose of sorting out material.

Complaints have arisen in the course of the year of nuisances arising from unauthorised persons tipping refuse (including garden refuse) on private land unenclosed and which does not form one of the Corporation tips.

Public Conveniences.—These have been maintained as usual in a cleanly state throughout the year, 3 additional conveniences having been erected.

Pavements.—A noticeable feature in connection with the condition of the pavements during periods of rainfall might be mentioned here as affecting the health of the people. This is in reference to the objectionable practice of downcomers discharging roof water onto the pavement where it flows sometimes in the form of quite a stream into the gutter. Pedestrians very quickly get their boots or shoes wet through on their way to work, and school children may sit during the morning with wet feet in the schoolroom and, as is well known, cold and wet feet are predisposing causes to various illnesses, including colds and other catarrhal conditions.

Public Swimming Baths.—There are now two plunge baths in the Borough, which have been well attended during the year. The suggested open air sea water bath at Sea Lane, and the additional plunge bath in Newcastle Road, have not yet materialised.

The system of purification of the water in both baths has continued to be carried out economically by continuous chlorination and filtration, the whole of the water being changed once every four hours. On leaving the bath the water passes through a strainer, after which a chemical injection is made to destroy any bacteria. It then passes through filters and thence to the bath heater where the temperature is raised to 75 degrees Fahrenheit. On leaving the heater the water is aerated, and just before entering the bath a minute injection of Chlorine is made to ensure the purity of the water.

In order to show the efficiency of this method, 7 samples of water were taken during the year and submitted to bacteriological examination and in all instances, with the exception of one sample which proved unsatisfactory and which occurred at a peak time during the bathing season when the bath was being used to the utmost capacity and the amount of chlorination required increasing, have the results been to the effect that the swimming bath water had the bacteriological purity of good drinking water. It is obvious that with this method of purification the standard of cleanliness of the water remains higher than in the old fill-and-empty without treatment system.

Sanitary Inspection of District.—The number of visits made during the year by the district inspectors (including appointments and advisory visits with owners, agents, or tradespeople, advising as to official requirements, etc., inspections and re-inspections of premises during progress of the work) was 37,072.

Inspection of Theatres, etc.—Including the annual official inspection, 108 visits were made to theatres, music halls, and cinemas, which have been maintained in an efficient sanitary condition during the year.

Training of Pupil Sanitary Inspectors.—During the year two pupil Sanitary Inspectors were trained in the Department in preparation for the examination of the Royal Sanitary Institute, which they subsequently passed.

Meat Inspectors' Course.—The course for Meat Inspectors was discontinued during the year owing to a lack of the necessary pupils. This has arisen owing to the fact that both Newcastle and Durham have, since these classes were instituted at the Sunderland Technical College, commenced courses on their own. It should be remembered that this course is not primarily for the instruction of Sanitary Inspectors to become Meat Inspectors but is also to teach technical assistants in wholesale and retail shops the value of the knowledge of the hygiene of foodstuffs.

Food for the people is receiving more and more prominence as the years go by and employers in trades dealing with foodstuffs should seriously consider encouraging their assistants to take up these courses. The course commences in September of each year.

Rent and Mortgage Interest (Restrictions) Acts, 1920-1925.—No applications were received by the Council under the Rent and Mortgage Interest (Restrictions) Acts, 1920-1925, from occupiers of controlled houses.

Legal Proceedings.—In 15 cases only were legal proceedings instituted during the year. Five of these were in connection with breaches of the Milk and Dairies Order, 1926; one under the Milk and Dairies (Amendment) Act, 1922; eight under the Sale of Food and Drugs Acts; and one under the Public Health Acts. (For result of proceedings see Table.)

COMPLETE TABLE OF LEGAL PROCEEDINGS, 1933.

Particulars of Complaint.	No.	Result.
Sale (by unlicensed dealer) of ordinary milk in bottle marked with a graded designation	1	Fined £5.
Sale of milk from unregistered premises by unregistered dealer	1	Dismissed with a caution.
Selling Milk deficient in milk fat	4	2 Fined 20/- & Analyst's certificate fee (15/-). 1 Dismissed with a caution 1 Fined 5/- & Analyst's certificate fee (15/-).
Selling Milk deficient in non-fatty solids.....	1	Case Dismissed.
Selling Milk deficient in milk fat and non-fatty solids	3	1 Fined 20/- & Analyst's certificate fee (15/-) 1 Fined 40/- & Analyst's certificate fee (15/-) 1 Fined 10/-.
Filling bottles with milk in public street	4	2 No conviction; 5/- in Poor Box. 1 Fined 20/-. 1 Fined £5 (2 defendants fined £2.10-0 each).
Exposing diseased meat for sale.....	1	1 Fined £5 (3 defendants 2 fined £2.10-0 each, 1 dismissed.

Common Lodging-Houses.—There are 9 registered common lodging-houses in the Borough as against 8 last year, the increase being due to the re-licensing of No. 2, Arras Lane after extensive alterations. These houses provide accommodation for 543 lodgers. There were accommodated in these lodging-houses during the year 296 permanent and 88 casual lodgers daily, or 70.7 per cent. of the total accommodation. The standard of cleanliness and conduct has again been maintained during the year, no cautions or action in any respect, apart from verbal advice by the Inspectors during routine inspections, having been necessitated.

Seamen's Lodgings.—In addition to the common lodging-houses above mentioned, there are facilities for sleeping accommodation and recreation at the Seamen's Mission and Institute in Tatham Street (50 beds); and the National Sailor's Institute, at Murton Street (24 beds).

Ice-Cream—Street Vendors, Shops and Sheds.—980 visits were paid by the members of the Inspectorial staff to premises (exclusive of barrows) where ice-cream is either manufactured, stored or sold.

Although all premises where ice-cream is manufactured are kept under observation by the Inspectors, it would be an advantage if registration of ice-cream vendors was made compulsory, inasmuch as approval of premises prior to the establishing of the trade, with power to refuse unsuitable premises, would obviate ice-cream being manufactured under insanitary conditions.

Cellar Dwellings.—Every opportunity has been taken to close cellar dwellings, a number having been closed on the recommendation of the Inspectors without formal notice and also a number when reconditioning took place under the Housing Acts. The position of alternative accommodation inhibits further action, but whenever a cellar dwelling becomes unoccupied measures are taken with the landlord to prevent its re-letting.

During the year 8 notices were served for the rendering of cellar dwellings into a state fit for human habitation by the construction of adequately sized areas at the front and rear of the buildings, suitable drainage, and the remedying of all dampness in the house walls. 5 of the notices have been carried out, 2 are receiving attention, and 1 has had a Closing Order served with respect to that particular part of the house.

Offensive Trades.—The number of establishments carrying on offensive trades in the Borough is 176; of these 148 are fish friers:—

Fish Curing Houses	3
Fish Frying	148
Skin (Gut and Casings) Preparing Houses	3
Marine Stores (Rag and Bone, &c., Dealers)	11
Hide and Skin Warehouses	3
Tallow Melting Works	2
Tripe Preparers	4
Knackery	1
Soap Works	1
	<hr/>
	176
	<hr/>

Four applications were received during the year for the establishment of the offensive trade of fish frier. Three were refused on the grounds of unsuitability of premises and redundancy, and one was granted.

SUMMARY OF INSPECTIONS AND VISITS BY THE DISTRICT INSPECTORS.

Houses and Premises: visits or examina- tions on account of	Infectious Disease	1641
	„ „ Contacts	82
	Alleged Nuisances (Unfounded complaints 139)..	759
	House to House work	12,440
	Housing Acts.....	3,215
	Occupants	493
	Drainage	3,413
	Work in progress	6,416
	Information (Ownerships, &c.)	1,132
	Appointment or Advice	972
Common Lodging Houses		55
Schools (Inspection of Conveniences, &c.)		148
Public Sanitary Conveniences (including Licensed houses, places of entertainment, &c.)		420
Vans, tents, &c.		116
Stables, &c.		561
Offensive trades		2,296
Streams, ditches, &c.		70
Other visits and inspections		2,843
		<hr/>
Total Inspections.....		37,072
		<hr/>

NOTICES SERVED IN CONSEQUENCE OF NUISANCES, &c.,
FOUND DURING INSPECTIONS AND VISITS.

Nature of Notice.	Verbal	Intimation.		Statutory.		Total Notices.
		Owner.	Occupier.	Owner.	Occupier.	
To Cleanse or Repair Drains	117	91	...	233	...	441
„ Renew Drains	132	9	...	11	...	152
„ Renew Defective Water-closet Basin ..	54	54	...	86	...	194
„ Cleanse Dirty Water-closet Basin ..	46	55	...	6	...	107
„ „ „ Floor, Seat, etc., of Water-closet	159	21	14	3	...	197
„ Repair Seat, Roof, Door of Water- closet	67	247	...	12	...	326
„ Renew or Repair Flushing Cistern...	94	144	...	41	...	279
„ „ „ „ „ Pipe	49	56	...	12	...	117
„ Provide Additional Water-closets ...	35	4	...	...	...	39
„ Provide Water Supply to Water closet	11	29	...	1	...	41
„ Abolish Waste-water closet .....	...	...	...	...	...	...
„ Abolish Privies and substitute Water-closets.....	...	...	...	...	...	...
„ Repair or Renew Soil or Vent Pipe.	24	8	...	2	...	34
„ Repair or Renew Bath Waste Pipe.	30	2	...	1	...	33
„ „ „ „ „ Lavatory Waste Pipe.	48	2	...	...	...	50
„ „ „ „ „ Sink Waste Pipe	22	5	...	1	...	28
„ Provide new urinal .....	...	...	...	...	...	...
„ Repair or cleanse Urinal.....	...	...	...	...	...	...
„ Abolish Ashpit and Provide Dustbin ..	...	...	...	...	...	...
„ Repair or Renew Dustbin	102	346	..	62	...	510
„ Provide Additional Dustbin	19	96	...	3	...	118
„ Cleanse Dirty Rooms or houses	93	16	26	...	...	135
„ „ „ „ „ Bedding, etc.....	4	1	...	...	...	5
„ Limewash Staircase Walls, Yard Walls, conveniences, &c.	84	2	5	...	...	91
„ Repair Windows, Walls, Floors, Ceilings, etc.	365	1434	...	126	...	1925
„ Remedy Damp Walls	89	287	...	27	...	403
„ Provide Light and Ventilation.....	5	14	...	1	...	20
„ Repair Roof	87	503	...	56	...	646
„ „ „ „ „ or Renew Spouts.....	172	624	...	74	...	870
„ Abate Overcrowding	74	13	4	3	...	94
„ Provide Domestic Water Supply ...	7	19	...	...	...	26
„ „ „ „ „ or Repair Yard Pavement...	55	142	...	17	...	214
„ Cleanse Yard Pavement	182	1	8	...	...	191
„ Remove Offensive Accumulations ...	130	31	2	17	...	180
„ „ „ „ „ Manure	69	2	...	...	...	71
„ Abate Nuisance from the keeping of Animals, etc.....	50	1	2	...	...	53
„ Provide or Renew Manure Pit .....	...	...	...	...	...	...
„ Pave or Repair Stable or Byre floors	1	...	...	...	...	1
„ Cleanse Streams, Ditches, &c.	3	...	...	...	...	3
„ Abate other Nuisances.....	300	496	...	50	...	846
TOTALS.....	2779	4755	61	845	...	8440

DRAIN TESTING.

	Nature of Test.			Total.	Defective.
	Water.	Chemical.	Smoke.		
On Request ..	83	7	39	129	50
On Complaint ..	...	4	7	11	1
On Suspicion of Nuisance ..	115	5	35	155	89
On Account of Infectious Disease ..	...	...	...	...	...
Work in progress ..	768	...	137	905	83
Retested ..	231	...	20	251	7
Totals ..	1197	16	238	1451	230

NUISANCES ABATED AND WORK PERFORMED.

Drains cleansed or repaired	460	Ashpit abolished and dustbin provided .....	...
„ renewed		Dustbin repaired or renewed ...	465
{length		Dustbin, additional provided ...	96
Metal 6 in. — ft.		Dirty rooms or houses cleansed..	102
„ 4 in. 2460 ft.	374	„ bedding, &c., cleansed ...	5
{Stoneware 6 in. ... 398 ft.		Staircase walls, yard walls, conveniences, &c, limewashed	97
„ 4 in. ... 8349 ft.		Windows, walls, floors, ceilings, &c., repaired	1593
Watercloset basin renewed	220	Dampness remedied	340
„ „ cleansed	105	Light and Ventilation provided	14
„ floor, seat, &c.,		Roof repaired	531
cleansed	199	Spouts renewed or repaired.....	588
„ seat, roof, door		Overcrowding abated.....	15
repaired	276	Domestic water supply provided	26
„ cistern renewed		Yard pavement provided or repaired	191
or repaired	279	Yard pavement cleansed	176
„ flushing pipe		Offensive accumulations removed	159
renewed or repaired	111	Manure, &c., removed	66
„ additional provided.	84	Keeping of animals, nuisance abated	34
„ water supply		Manure pit provided or renewed	...
provided	40	Stable or byre floors paved or repaired	1
Waste watercloset abolished ...	...	Streams, ditches, &c., cleansed ..	3
Privy abolished and watercloset substituted	1	Other nuisances abated.....	675
Soil or Vent Pipe repaired (or renewed) [length 2142 ft.]	78		
Bath waste pipes repaired (or renewed)	40		
Lavatory waste pipes repaired (or renewed)	49		
Sink waste pipe repaired (or renewed)	35		
New urinal provided	5		
Urinal repaired or cleansed	3		

Factories, Shops and Workshops.—On this and the following three pages will be found a complete summary of the work done in connection with Factories, Shops and Workshops.

FACTORIES, WORKSHOPS & WORKPLACES.

1.—Inspection of Factories, Workshops, and Workplaces.

Premises. (1)	Number of		
	Inspections (2)	Written Notices. (3)	Prosecutions. (4)
FACTORIES (Including Factory Laundries).	493	21	...
WORKSHOPS (Including Workshop Laundries).	735	101	...
WORKPLACES (Other than Outworkers' premises).	210	19	...
Total.....	1438	141	...

2—Defects found in Factories, Workshops, & Workplaces.

Particulars. (1)	Number of Defects.			Number of Prosecutions (5)
	Found. (2)	Re-medied. (3)	Referred to H M. Inspector. (4)	
<i>Nuisances under the Public Health Acts:</i>				
Want of cleanliness	178	178	...	...
Want of ventilation.....	3	3	...	...
Overcrowding.....	...	...	...	...
Want of drainage of floors.....	3	3	...	...
Other nuisances	236	236	...	...
Sanitary } insufficient.....	5	4	...	...
Accommo- } unsuitable or defective	64	64	...	...
dation. } not separate for sexes.	1	1	...	...
<i>Offences under the Factory and Workshop Acts:—</i>				
Illegal occupation of underground bakehouses (s. 101) .....	...	...	...	...
<i>Other Offences:</i> (Excluding offences relating to outwork and offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921).....	27	27	21	...
Total.....	517	516	21	...

SHOPS ACT.

GIVING THE NUMBER OF VISITS BY THE SHOPS INSPECTOR.

SHOPS ACT VISITS—	
Booksellers and Stationers	8
Boot and Shoe Dealers	18
Butchers	29
Chemists and Druggists	14
Clothiers	23
Confectioners	157
Costumiers and Mantle Makers	12
Coal Landsales	8
Drapers	36
Fancy and Smallware Dealers .....	...
Fishmongers	52
Fruiterers	80
Furniture Dealers	13
Glass and China Dealers	3
Grocers and Provision Dealers	138
Hairdressers and Barbers	68
Herbalists .....	...
Ironmongers and Hardware Dealers	5
Jewellers and Opticians	7
Licensed Victuallers	6
Milliners	15
Motor and Bicycle Dealers	3
Music and Musical Instrument Dealers.....	5
Newsagents	28
Pawnbrokers	4
Refreshment Houses	64
Saddlers and Leather Cutters	7
Second Hand Clothes	5
Sundry	484
Ship Stores Merchants	7
Tobacconists	8
Theatres, Picture Houses, &c.	108
Total Inspections.....	1415

Factory and Workshop Act, 1901.

Irregularities Found and Infringement of Acts Noted.

	Defaults Found.	Notices Served.		
		Owner.	Occupier.	Totals.
FACTORY AND WORKSHOP ACT—				
To Cleanse or Limewash Factory.....	4	...	4	4
„ „ Workshop	26	5	21	26
„ „ Workplace	10	4	6	10
„ „ Bakehouses	80	31	49	80
„ „ Restaurant Kitchens ...	6	2	4	6
„ „ Sanitary Conveniences ..	52	27	25	52
To abate Nuisance from:—				
Gas Rings and Stoves.....	15	4	11	15
„ Defective Sanitary Convenience	34	32	2	34
„ „ Drains	28	18	10	28
„ „ Walls, Floors, Ceilings, Roofs, Spouts, etc.	76	76	...	76
„ Accumulation of Trade Refuse	117	27	90	117
„ Overcrowding.....	...	...	...	...
To provide Light and Ventilation	3	3	...	3
„ Suitable and sufficient Sanitary Conveniences	5	5	...	5
„ Separate Sanitary Conveniences for Sexes	1	1	...	1
„ Screens to Sanitary Conveniences for Sexes. ....	...	...	...	...
„ Intervening space to San. Convenience ...	...	...	...	...
„ List of Outworkers .....	...	...	54	54
„ Drainage to Floors of Workshop	3	3	...	3
To Display Abstract, Factory and Workshop Act..	27	...	27	27
Defaults in Theatres, Cinemas, etc.....	52	52	...	52
Beds in Shops,	4	...	4	4
Totals.....	543	290	307	597

FACTORIES, SHOPS, AND WORKSHOPS.

The following work has been performed by the Inspector appointed for this purpose:—

Inspections and Enquiries.	No.
Factories.....	493
Workshops.....	735
Workplaces.....	210
Restaurant Kitchens, Including Cafés, Etc.....	65
Domestic Workshops.....	427
Laundries.....	2
Outworkers, Home.....	47
„ Employers of	24
Bakehouses.—	
Wholesale.....	37
Retail.....	334
Domestic.....	316
Total Inspections.....	2690

Plans.—The practice of all plans for new buildings being submitted to this office for examination in relation to sanitary works has been continued throughout the year. This is an important connection between the Building Surveyor and the Health Office. The total number of plans examined and commented upon was 343, as compared with 209 for the previous year.

Rat Repression.—Particulars of the work done by the Rat Catcher for the Borough are given in the subjoined table:—

Premises inspected on receipt of complaint.....	154
Rats caught by dogs, traps, or killed by hand or poisoned	1902
Visits for purposes of observation, work in progress, or work done	4934

During the National Rat Week (Nov. 6th—11th) the Official Rat Catchers carried out an intensive campaign, viz.:—

A thorough search of all vessels in the Port of Sunderland was made by the Port Rat Catcher, together with a search of the contiguous warehouses and other likely infested premises.

A number of known "rat runs" were dealt with by S.O.2 with good results.

Literature was distributed to Masters of Ships and to the occupiers of warehouses, etc., near the river and docks.

The Borough Sanitary Inspectors also distributed literature, which resulted in numerous enquiries at the Health Department, and requests for the services of the Borough Rat Catcher.

Prior to Rat Week, 300 copies of a large poster giving advice for the destruction of these vermin were posted on the principal warehouses and hoardings in the Borough.

The "Sunderland Daily Echo" also gave prominence to the subject, and drew attention to the duties imposed upon the public by the Rats and Mice (Destruction) Act.

In this Borough action is taken all the year round for the execution and enforcement of the Rats and Mice (Destruction) Act, and there is no doubt that the extra publicity and efforts put forward during Rat Week will be effective in greatly reducing the rat population and reminding the occupiers of premises of their obligation to take steps for the reduction of these vermin.

Schools.—Sanitary supervision of schools is given as a routine by the Inspectorial staff, and during the year under review 148 visits were paid in this respect.

Rag Flock Acts, 1911 and 1928.—There are no premises in the Borough where rag flock is actually manufactured although it is used by a number of firms during the process of their particular trade. During the year under review, 5 samples were taken which contained Chlorine but within the amount permitted by the Acts.

FOOD.

Milk.—The supervision of all premises where milk is produced has been continued throughout the year, and the standard of cleanliness of farms and dairies has been maintained at a high level.

The following table shows the results of samples taken for the presence of dirt and clearly indicates the cleanliness with which milk in the Borough is handled:—

EXAMINATION OF MILK FOR PRESENCE OF DIRT.

Sample Examined.	Result of Examination: Yielded moist sediment expressed in parts (by volume) per 100,000 of Milk.	Action taken.	Remarks.
No. 118	1·6		Milk yielding not more than 2 parts of moist sediment per 100,000 parts of milk is considered CLEAN Milk.
„ 119	2·0		
„ 140	1·2		
„ 141	2·0		
„ 241	1·2		
„ 242	2·0		

Milk yielding not more than two parts of moist sediment per 100,000 parts of milk being considered clean milk, the average of 1·6 parts for the six samples taken shows the result of supervision over the method of milking, the cleanliness of the cattle, and the subsequent careful handling of the milk from producer to consumer.

This standard of cleanliness is not so high as has been recorded in past years. Last year, for instance, 0.7 parts was the average instead of 1.6.

In the Borough, 63 retailers had Grade A licenses during 1933, compared with 46 in the previous year; and 4 had Certified licenses. In addition, 1 producer and retailer held a license for Certified milk issued by the Ministry of Health.

GRADED MILK AND ISSUE OF LICENCES.

LICENCES ISSUED UNDER THE MILK (SPECIAL DESIGNATIONS) ORDER, 1923.

Description of Licences.	Number in force on 31st Dec., 1933.
(1) Producers' Licences to use the designation "Grade A".	3
(2) Dealers' Licences to use the designation "Certified"...	4
(3) Dealers' Licences to use the designation "Grade A (Tuberculin Tested)":—	
(a) Bottling Establishments.....	...
(b) Shops.....	3
(4) Dealers' Licences to use the designation "Grade A":—	
(a) Bottling Establishments.....	1
(b) Shops.....	63
(5) Dealers' Licences to use the designation "Pasteurised":—	
(a) Pasteurising Establishments.....	...
(b) Shops.....	1

The amount of graded milk produced per day in the Borough approximates 221 gallons. Apart from the graded milk produced in the Borough, the following amounts of graded milk are imported by road and rail every day, as compared with 1932:—

	1933.	1932.
Certified milk	193 gallons.	153 gallons.
Grade A. (T.T.) milk.....		
Grade A. milk.....	371 „	391 „

During the year "Certified" milk has been supplied to patients and staff at the Maternity Home, Grindon Hall and the Borough Sanatorium, and approximately 217 gallons of Graded milk per week has been supplied to school children at the schools.

Bottling Milk on Public Street. Contravention of Article 31 of Milk and Dairies Order, 1926.—With the greatly increased number of bottles used for the delivery of milk sold by retail, there is also an increase in the number of cases of milk being bottled on the public street. This undesirable and insanitary practice is something more serious than a simple contravention of the Milk and Dairies Order, it is also a menace to public health. The usual practice in these cases is for the offending dairymen to refill used and uncleansed bottles, which bottles may have been left for hours on doorsteps exposed to contamination from the dust and dirt of a public street.

Occupiers of houses where infectious disease occurs must of necessity be supplied with milk. In such a case the refilling of a used bottle without proper cleansing and sterilisation will add the danger of the spread of infectious disease to the danger of contamination by dirt.

It is very difficult to obtain direct evidence necessary for a successful prosecution. Offending dairymen are usually on the alert, and a well-known and easily recognised inspector must resort to subterfuge.

Legal proceedings have successfully been taken this year against four dairymen, and penalties varying from 5/- to £5 have been inflicted.

Heated Milk.

A practice has come to my notice which is very common in the town with relation to the sale of milk. Many retailers boil surplus milk in the evening and sell it as milk the following morning.

A woman asking for a pint of milk in order to feed her baby receives milk the fresh element of which has been destroyed by heating. She is thus in a position of false security in thinking that she is bringing her child up on a biological fluid without the necessity to add fresh elements of foodstuffs.

The Town Clerk of Sunderland has obtained Counsel's advice, through the Association of Municipal Corporations, a copy of which is given overleaf.

OPINION.

If the purchaser merely asks for milk I think there would be considerable difficulty in establishing that he had not received the article demanded when supplied with milk which has been heated and which complies with the Sale of Milk Regulations of 1901.

On the other hand if he asks for fresh milk or new milk and is supplied with milk which has been heated he is not, in my opinion, getting what he asked for any more than if he were supplied with skimmed milk.

I draw attention to this question in order that some publicity might be raised in notifying women that if they want fresh milk they should ask for fresh milk, whereas if they merely ask for milk they may be given a heated milk without being told that the milk has been heated.

When a woman buys pasteurised milk she knows that the milk has been heated and she adds fresh orange juice to the diet of a baby; but if a woman does not realise that the milk has been heated she possibly does not add such a necessary adjunct to a child's dietary.

Cows and Cowsheds.—The total number of farms visited for purposes of inspection of cows and cowsheds was 20, the total number of visits paid was 136, and the number of cowsheds inspected was 35.

At 132 of the visits the sheds were reported clean whilst at 4 they were dirty.

REGISTERED DAIRIES, COWSHEDS, AND MILKSHOPS.

Cowkeepers inside Borough	20
Cowsheds ,, ,,	35
Cows (approx.),, ,,	316
Dairymen inside Borough	86
Cowkeepers outside Borough Registered for Sale of Milk within Borough	15
Dairymen ,, ,, ,, ,, ,, ,, ,, ,,	11
Milkshops { In sealed Bottles 476 }	556
{ Ordinary.. 80 }	

Report of the Veterinary Inspector.—The Veterinary Inspector, Mr. Mitchell, reports of activities under the provisions of the Milk and Dairies and the Tuberculosis Orders for the year 1933:—

No. of registered milk producers in Borough 20

No. of cows examined:	1st Quarter	...	...	335
	2nd	„	...	318
	3rd	„	...	330
	4th	„	...	345

Average cow population during the year... 332

No. of routine quarterly visits of inspection 74

No. of special visits 11

Total No. of visits 85

Cows slaughtered under the provisions of
the Tuberculosis Order, 1925.

Found diseased as the result of bulk sampling 2 cows.

Found diseased during routine inspections... Nil.

Reported as suspected by owners and
found diseased 4 cows.

Total ... 6 cows.

“ This number, compared with 17 slaughtered as diseased in 1932, can only be regarded as highly satisfactory. That the number is so small must be attributed largely to the good Summers of 1932 and the year under review, resulting in a universal supply of good quality energising fodder.

“ Once again, as in 1932, only two bulk samples of milk taken from producers in the Borough were found to contain tubercle bacilli, and in each case, after considerable difficulty and by processes of elimination, the offending cow was traced and destroyed. Neither animal, even when definitely located, was found to be a clinically recognisable case of tuberculosis, though post mortem examination established the fact that each was suffering from early tuberculosis of the udder.

“ The other 4 cows slaughtered were reported as suspected by the owners themselves. This, together with the fact that I was unable to find, at my routine quarterly examinations, any cows suffering from any of the forms of tuberculosis specified in the Order of 1925, clearly indicates that the milk producers are conscientiously fulfilling their duty to the public.”

Dairy Farms and Milkshops.—The following tables show the number of registered dairy farms and milkshops in the Borough on December 31st, 1933:—

DAIRY FARMS IN THE BOROUGH.

Number of Dairy Farms in the Borough on the		
Register on December 31st, 1932	... ..	21
Number added to Register during the year	...	1
Number removed from Register during the year	...	2
Number on Register on December 31st, 1933	...	20

MILKSHOPS AND DAIRIES IN THE BOROUGH.

Number of Milkshops in the Borough on the		
Register on December 31st, 1932	... ..	525
Number added to Register during the year	... ..	130
Number removed from Register during the year	...	8
Number on Register on December 31st, 1933	...	647

The following visits were paid during the year by the Sampling Inspector in connection with the Milk and Dairies Acts and Orders:—

						Visits
To dairies and milkshops	... ..	...	...	...	...	2,251
To cowsheds	... ..	...	...	...	...	136
To railway stations	... ..	...	...	...	...	125

Milk and Food Analysis.—The following table sets out the number of samples of milk taken during the year and examined by the Public Analyst with information as to quality and composition:—

SAMPLES OF MILK AND CREAM SENT TO THE PUBLIC
ANALYST FOR EXAMINATION DURING 1933.

Article.	Genuine.	Adulter- ated.	Total.	Taken formally.		Taken informally.	
				Genuine.	Adulter- ated.	Genuine.	Adulter- ated.
Milk	175	22	197	169	21	6	1
Cream	7	...	7	...	...	7	...
„ Tinned ...	3	...	3	...	...	3	...
„ Artificial...	1	...	1	...	...	1	...
	186	22	208	169	21	17	1
				190		18	

Of these 22 samples of milk found to be adulterated, 6 were adulterated by the presence of extraneous water, 11 by the deficiency of fat, and 5 by a deficiency of fat in addition to the presence of extraneous water.

The largest amount of added water found in any sample was 8.0 per cent. ; whilst the most serious deficiency of fat was 26.6 (see table on page 45).

The results of the submission of these cases to Court are found in the table on page 27.

Guinea Pig Tests.—During the year, in addition to the samples of milk submitted to the Public Analyst, 104 samples were sent to the Royal Infirmary Pathological Department for examination for the presence of the tubercle bacillus, and 9 were returned as positive. In all cases where necessitated the Local Authorities in whose district the milk had been produced were informed, in accordance with Section 4 (1) of the Milk and Dairies (Consolidation) Act, 1915, and the Veterinary Surgeon, in company with the veterinary advisers of the districts concerned, visited the farm and inspected the cows.

Food and Drugs.—The Food and Drugs Inspector took 4 formal and 185 informal samples of food other than milk and cream, the results of the analysis of which appear in the table on page 44. The total number of formal samples of all kinds taken during the year was 194, and informal 203.

Preservative in sausage not declared.—Four butchers were warned for selling sausage which contained preservative ; the amount contained was below the limit permitted by the Preservative in Food Regulations, but the presence of the preservative was not declared.

SAMPLES OF FOOD (OTHER THAN MILK AND CREAM) AND DRUGS SENT TO THE
PUBLIC ANALYST FOR EXAMINATION DURING 1933.

Article.	Genuine.	Adulterated.	TOTAL.	Taken Formally.		Taken Informally.	
				Genu- ine.	Adult- erated.	Genu- ine.	Adult- erated.
Almonds, (ground)	4	...	4	...	...	4	...
Boracic Acid Powder	3	...	3	...	...	3	...
„ Ointment	3	...	3	...	...	3	...
Butter	7	...	7	...	...	7	...
Bacon	4	...	4	...	...	4	...
Castor Oil	2	...	2	...	...	2	...
Citric Acid	3	...	3	...	...	3	...
Camphorated Oil	4	...	4	...	...	4	...
Cocoa	1	...	1	...	...	1	...
Cinnamon	1	...	1	...	...	1	...
Cloves (ground)	1	...	1	...	...	1	...
Coffee	4	...	4	...	...	4	...
Cheese	6	...	6	...	...	6	...
Confectionery	5	...	5	...	...	5	...
Dripping	6	...	6	...	...	6	...
Flour	2	...	2	...	...	2	...
„ Self-Raising	2	...	2	...	...	2	...
Fruit (tinned) various	3	...	3	...	...	3	...
Glycerine	2	...	2	...	...	2	...
Iodine, Tincture of	3	1	4	...	...	3	1
Jams (various)	8	...	8	...	...	8	...
Lard	7	...	7	...	...	7	...
Magnesia .....	...	2	2	...	...	...	2
Margarine	7	...	7	...	...	7	...
Mixed Spice	1	...	1	...	...	1	...
Milk (Condensed)	13	...	13	...	...	13	...
Marmalade	2	...	2	...	...	2	...
Mincemeat	3	...	3	...	...	3	...
Mustard	3	...	3	...	...	3	...
Nitre, Sweet Spirits of	3	...	3	...	...	3	...
Nutmegs (ground)	1	...	1	...	...	1	...
Pepper	4	...	4	...	...	4	...
Peas (tinned)	4	...	4	...	...	4	...
Pickles	4	1	5	...	...	4	1
Rice, (ground)	3	...	3	...	...	3	...
Rum	2	1	3	...	...	2	1
Sausage	23	3	26	3	1	20	2
Sauce	4	...	4	...	...	4	...
Sugar	3	...	3	...	...	3	...
„ Icing	3	...	3	...	...	3	...
Tartaric Acid	2	...	2	...	...	2	...
Tea	2	...	2	...	...	2	...
Vinegar	7	...	7	...	...	7	...
Whiskey	2	2	4	...	...	2	2
Zinc Ointment	2	...	2	...	...	2	...
	179	10	189	3	1	176	9

ANALYSIS OF FORMALLY PURCHASED FOOD AND DRUGS SHOWING
EXTENT OF ADULTERATION AND ACTION TAKEN.

Articles Analysed.	No. Analysed.	Result of Analysis.		Sample Number	Extent of Adulteration.	Action taken & Remarks.
		Genu- ine.	Adult- erated.			
Milk	190	169	21	10	Deficient in Milk Fat 3.3% ...	
				54	{ do. do. 13.3% } do. non fatty solids 1.3%	Fined 20s. and Analyst's Certifi- cate Fee (15s.).
				55	do. milk fat 26.6% ...	do.
				61	{ do. do. 6.6% } do. non-fatty solids 1.4%	Fined 40s. and Analyst's Certifi- cate Fee (15s.).
				63	do. milk fat 26.6% ...	Fined 20s. and Analyst's Certifi- cate Fee (15s.).
				71	do. non-fatty solids 3.1% ...	Vendor interviewed
				101	do. do. 2.1% ...	Milk Fat high.
				117	do. do. 8.0% ...	Case dismissed.
				119	{ do. milk fat 6.6% } do. non-fatty solids 4.0%	Fined 10s.
				133	do. milk fat 16.6% ...	Dismissed with a Caution.
				179	do. do. 20.0% ...	Fined 5s. and Analyst's Certifi- cate Fee (15s.).
				236	do. non-fatty solids 2.8% ...	Letter of Caution.
				238	do. milk fat 3.3% ...	do.
				239	do. non-fatty solids 4.4% ...	do.
				245	do. do. 2.0% ...	do.
				248	do. milk fat 3.3% ...	do.
				274	{ do. do. 8.3% } do. non-fatty solids 5.2%	do.
				281	do. milk fat 6.6% ...	do.
				283	do. do. 11.6% ...	do.
				284	do. do. 5.0% ...	do.
				290	{ do. do. 11.6% } do. non-fatty solids 7.7%	do.
Sausage	4	3	1	208	Contained 620 parts of Sulphur Dioxide per million	do.

REPORT OF SAMPLING &c., INSPECTOR.

Visits of Inspection.	No. of Inspections.	Defaults.	Com-munica-tions.
MILK.			
Premises inspected for registration	130	...	...
Premises taken off register	8	...	...
Milk and Dairy Produce Shops	301	12	3
Cowsheds	136	4	3
Milk Stores	190	4	...
Milk Retail Shops	1614	6	...
Milk Empty Churns	1008	4	4
Milk Carts and Barrows	706	...	...
ICE CREAM.			
Barrows and Utensils	94	...	...
Stores	579	..	...
Shops	401	...	..
Biscuit making and retailing	18	...	...
FOOD AND DRUGS ACTS.			
Milk and Cream Samples	208	...	...
Other Samples	189	...	...
BACTERIOLOGY.			
Milk Samples	187	...	...
Water „	8	...	...
Rag and Flock Act	5	...	...
Other Inspections	29	...	...
Smoke Observations	12	...	...
Fertilisers & Feeding Stuffs Acts, 1926	16	...	...
	
	5833	30	10

MILK SAMPLES FOR TUBERCLE—SOURCES OF SUPPLY.

Local Farmers.	Local Dairymen. per		Durham.	Yorks.	West-morland	Cumberland.	Northumber-land.	Scotland.	Total.
	Rail.	Farmers.							
35	24	45	77	11	1	4	4	7	104

NUMBER OF MILK AND CREAM SAMPLES SUBJECTED TO
ANALYTICAL EXAMINATION FOR THE ESTIMATE OF MILK
FAT OR ADDED WATER, BACTERIOLOGICAL EXAMINATION
FOR TOTAL ORGANISMS, AND FOR EXAMINATION FOR THE
PRESENCE OF TUBERCLE BACILLI, DURING 1933.

CHEMICAL ANALYSIS :

Milk	...	...	...	...	...	...	...	197
Cream	...	...	...	...	...	...	...	11

BACTERIOLOGICAL EXAMINATION FOR TOTAL ORGANISMS :

Certified and Grade A. (T.T.)	...	...	...	...	...	...	37
Grade A.	...	...	...	...	...	...	43
Pasteurised	...	...	...	...	...	...	3
Non-graded	...	...	...	...	...	...	—
„ „ (Taken for presence of dirt)	...	...	...	...	...	...	6

EXAMINATION FOR THE PRESENCE OF TUBERCLE BACILLI :

Non-graded	...	...	...	...	...	...	91
Graded	...	...	...	...	...	...	13

Summary of Non-Genuine Samples from 1915 to 1933, in respect of which
Legal Proceedings were taken, showing Results:—

Farmers 28:—

Convictions	.....	9.....	Dismissed.....	19
Above 15·0.....	Fined	8.....	Dismissed.....	9
Below 15·0.....	Do.	1.....	Do.	10

Dealers 55:—

Convictions	.....	41.....	Dismissed.....	14
Above 15·0.....	Fined.....	29.....	Dismissed.....	7
Below 15·0.....	Do.	12.....	Do.	7

FERTILISERS AND FEEDING STUFFS ACT, 1926.
TABLE SHOWING SAMPLES TAKEN AND RESULTS DURING 1933.

No.	Sample.	Analysis:							Analyst's Remarks.
		Oil.	Album- inoids. (protein.)	Fibre.	Phos- phoric Acid	Carbo- hy- drates.	Nitro- gen (N)	Free Acid as Sulphuric Acid H ₂ SO ₄ in Sulphate of Ammonia.	Potash
63	Fish Meal.....	% 6	% 64.6	% ...	% 8.6	% ...	% ...	% ...	% ...
64	Meat and Bone Meal.	9.4	46.7	...	10.5	...	...	...	...
65	Maize Meal	4.7	9.5	...	...	...	...	...	...
66	Alfalfa	1.5	13.2	26.6	...	...	...	...	...
67	Meat and Bone Meal.	9.7	37.0	...	16.8	...	...	...	...
68	Fish Meal ..	5.9	56.0	...	9.1	...	...	...	...
69	Meat and Bone Meal.	7.1	40.8	...	16.4	...	...	...	...
70	Laying Mash	4.8	20.0	5.6	...	40.7	...	...	...
71	Wheat Offals.....	...	...	9.6	...	...	...	...	...
72	Dairy Nuts	5.5	20.9	8.3	...	40.0	...	...	...
73	Cooked Maize	1.9	8.8	...	...	...	...	...	...
74	Herrington Ration.....	6.1	28.0	4.2	...	42.0	...	...	...
75	Grass Mixture	4.3	16.9	7.5	...	...	...	...	...
76	Linseed Cake	7.8	30.4	...	...	...	...	...	...
77	Pressed Cotton Cake.	4.9	25.2	...	...	...	...	...	...
78	Cooked Flaked Maize,	3.3	8.7	...	...	...	...	...	...

This sample more than fulfils the statements made as to its composition.
This sample agrees with the statements made as to its composition.
This is a sample of genuine maize meal.
This sample is low in albuminoids and oil but agrees with the amount of fibre stated.
This sample contains slightly more phosphate than is stated; but falls far short of the stated percentage of albuminoid—is indeed below the 40% minimal limit.
The sample agrees with the statements made as to its composition.
The sample is slightly short in oil; but contains the amount of albuminoid, and more than the amount of phosphate, that it is stated to contain.
This sample contains very much less carbohydrate, and much less fibre, than correspond with the statement.
This sample agrees with the statutory statement,
Do.
The sample just complies, in respect of albuminoids with the statement, but is short in oil by 36 per cent.
This sample more than complies with the statutory statement regarding oil, albuminoids and fibre, and agrees as to its content of carbohydrates.
This sample is deficient in fibre to the extent of 37½%, in oil 28%, in albuminoids 15½% of the amount given in statutory statement.
This sample agrees with statutory statement.
This sample more than complies with statutory statement.
This sample more than complies with the statement regarding oil, and agrees as to albuminoids content.

RAG FLOCK ACT, 1911.

SAMPLES TAKEN FOR ANALYSIS DURING 1933.

No.	Sample.	Contained CHLORINE soluble in water as prescribed in the Rag Flock Regulations, 1912, under the above-named Act.	Remarks.
1.	Rag Flock.....	8 parts per 100,000	Rag Flock should not contain more than 30 parts per 100,000 of Chlorine; these samples, therefore, with the exception of No. 3 were genuine. *Letter of Caution.
2.	„	9 „ „	
3.	„	*62 „ „	
4.	„	9 „ „	
5.	„	6 „ „	

MEAT.

There were 63 slaughter-houses in use during the year. Four licences lapsed, no application for renewal being received. One new licence was granted.

The number shows a decrease of four slaughter-houses compared with the previous year.

There is one registered knacker's yard for the slaughter of horses. The county and local veterinary inspectors, acting under the Tuberculosis Order, 1925, send diseased cattle to the knacker's yard for slaughter. The meat is boiled and sold for dog meat.

The following table shows the number of carcasses inspected during the year. While it is not possible to inspect all carcasses slaughtered, efforts are made to see all cows. Of the cows inspected, 56% showed evidence of tuberculosis in some part or organ:—

Calves.	Bulls.	Bullocks.	Heifers.	Cows.	Swine.	Sheep.	Total.
145	18	555	1403	1253	8405	5960	17739

The totals do not include carcasses and parts of carcasses sent in from outside the area for sale in wholesale meat shops.

The following diseased carcasses, with organs, were destroyed at the Wear Refinery Works, Hendon Dock, during 1933:—

Disease.	Heifers.	Calf.	Cows.	Swine.	Sheep.	Totals.	
Tuberculosis ...	6	1	35	23	...	65	
Actinomycosis	1	...	...	1	
Bruising, Extensive...	4	...	...	4	
Decomposition	5	11	16	
Emaciation	2	...	2	
Erysipelas	2	...	2	
Fever, acute.....	7	...	7	
Jaundice	1	...	1	
Pyæmia	1	...	...	...	1	
Peritonitis, Septic	1	...	3	1	5	
Rheumatism	1	...	1	
Septicaemia	1	...	1	
Swine Fever	3	...	3	
	6	3	40	48	12	109	

COMPARATIVE REPORT FOR 1932.

	Ox.	Heifers.	Calves	Cows.	Swine.	Sheep.	Total
Tuberculosis	2	5	3	31	40	...	81
Other Diseases.....	...	...	2	3	34	25	64
	2	5	5	34	74	25	145

The table shows a decrease of 36 carcasses. The decrease is in the number of swine and sheep carcasses destroyed.

Three carcasses of swine were destroyed for swine fever after the diagnosis had been confirmed by the Ministry of Agriculture's inspector. The slaughter-house and pinning pen were disinfected and cleansed.

TOTAL AMOUNT OF MEAT AND OFFAL DESTROYED (NOTIFIED,
OR OTHERWISE) AND COMPARATIVE REPORT.

1933.

	Notified.	Found during Routine Inspection.		Total lbs.
		Shops.	Slaughter Houses.	
Beef	34,281	16	476	34,773
Imported Beef	1,123	241	—	1,364
Mutton	684	—	—	684
Imported Mutton ..	101	57	—	158
Veal	282	—	—	282
Pork	5,296	710	1,718	7,724
Offal	18,497	70	23,056	41,623
	<u>60,264</u>	<u>1,094</u>	<u>25,250</u>	<u>86,608</u>

Total:—38 tons, 13 cwt., 1 qr., 4 lbs.

1932.

	Notified.	Found during Routine Inspection.		Total lbs.
		Shops.	Slaughter Houses.	
Beef	29,392	30	—	29,422
Imported Beef	995	30	—	1,025
Mutton	1,190	—	132	1,322
Imported Mutton ...	12	98	—	110
Veal	361	168	—	529
Pork	7,420	1,043	3,469	11,932
Offal	19,672	250	21,779	41,701
	<u>59,042</u>	<u>1,619</u>	<u>25,380</u>	<u>86,041</u>

Total:—38 tons, 8 cwt., 25 lbs.

The totals show a small increase of $5\frac{1}{4}$ cwt.

The number of carcasses destroyed was less than during the previous year, but these were small carcasses. Beef shows an increase due to parts of carcasses being destroyed in addition to whole carcasses.

**TOTAL AMOUNTS OF OTHER FOODS DESTROYED
AND COMPARATIVE REPORT.**

	lbs.		lbs		lbs.
Fruit	716	Tinned Meat	3,421	Bacon	32
Vegetables	80	Tinned Milk	1,648	Turkeys	60
Tinned Fruit.....	3,947	Tinned Fish	57	Rabbits	46
Tinned Vegetables ...	477	Wet Fish	42	Pies	66
Frozen Eggs	11	Provisions	775		

Total 5 tons 6 cwt. 10 lbs.

The total shows a decrease of $7\frac{1}{4}$ tons below the previous year's total, which was an abnormal one.

**COMPARATIVE REPORT AND TOTAL AMOUNTS OF ALL
FOODS DESTROYED.**

	1932.				1933.			
	Tons	Cwt.	Qrs.	lbs.	Tons	Cwt.	Qrs.	lbs.
Meat & Offal, notified	26	7	0	18	26	18	0	8
Meat & Offal, not notified..	12	1	0	7	11	15	0	24
Other Foods	12	6	2	10	5	6	0	10
	50	14	3	7	43	19	1	14

Public Health (Meat) Regulations, 1924.

A request to a butcher to re-condition his back shop resulted in a new bench being provided and the walls and floor being repaired.

A number of warnings were given to cleanse premises, keep vehicles clean and to wear head covers while carrying meat.

A letter of warning was sent to a butcher for failing to notify the presence of disease in a carcase and organs of a carcase.

The number of visits to allotments for inspection of slaughtered pigs shows a decrease of 31.

Public Health Act, 1875.

Under the provisions of the above-named Act, a piece of beef affected with tuberculosis was seized from a market meat stall and condemned by a magistrate. The two assistants on the stall were fined for exposing diseased meat for sale.

Slaughter of Animals Act, 1933.

This Act, designed to secure the compulsory slaughter by mechanical means of cattle, pigs where electricity is available, and sheep if the local authority so decide, came into force on the first of January, 1934.

By the end of the year 180 licenses for slaughter men were applied for and granted, and subsequently the Council decided against the inclusion of sheep as animals compulsorily to be slaughtered by this means.

Central Meat Inspection.—It will be seen by reference to the succeeding table that 10,509 visits were paid in connection with the examination of meat by two Meat Inspectors. This is in relation to 63 slaughter-houses and 220 butchers' shops.

By this inspection more than 38 tons of diseased meat was withheld from circulation for consumption by the public.

It is perfectly obvious that, provided that all meat could be examined centrally, more would be found in a diseased condition and unsafe for consumption.

Important as would be the improvement in meat examination by a Municipal abattoir, even more important still to the amenities of the people would be the resultant cessation of the keeping of animals in the pining sheds of private slaughter-houses in immediate proximity to occupied dwellings.

INSPECTION OF FOODS.

Premises Inspected and Number of Visits.

PREMISES.	Number of Visits.
MEAT TRADE—	
Butchers' Shops (retail)	3611
„ „ (wholesale)	584
Slaughter Houses	5320
Meat Vehicles	625
Cattle Market	12
Slaughtering on Allotments.. ..	80
Tripe Preparing and Shops	42
Game, Poultry, and Rabbit Shops	235
FISH—	
Fish Shops (retail)	224
„ Shops (frying)	84
„ Curing	4
„ Hawkers' Barrows	39
FRUIT TRADE—	
Fruit Shops (retail)	540
„ Warehouses	38
„ Market Stalls	560
„ Hawkers	98
PROVISIONS :—	
Retail Shops	554
Wholesale Warehouses	42
Other Visits	57
Total Inspections.. ..	12749

INFRINGEMENTS OF ACTS AND REGULATIONS RELATING
TO FOODS AND ACTION TAKEN.

OFFENCE.	ACTION TAKEN.		
MEAT TRADE.			
Exposing Diseased Meat for Sale.....	Summons.	Fines	Imposed.
Failure to notify disease in Carcase.....	Letter of warning.		
" " Slaughter.....	11	"	"
Accumulation of Refuse.....	verbal warnings.		
Dirty Back Shops.....	12	"	"
" Sausage Making Utensils.....	22	"	"
Meat Hanging outside window limits.....	4	"	"
Dirty Slaughter Houses.....	16	"	"
Defective Drains.....	11	"	"
Defective Offal Bins.....	9	"	"
Meat Uncovered on Vehicles.....	7	"	"
Meat Carriers without Clean Overalls.....	5	"	"
Failure to notify Slaughter.....	4	"	"
Imported Meat not Labelled.....	70	"	"
Exposing Meat to Contamination.....	2	"	"
Children in Slaughter Houses.....	2	"	"
Preserved Sausages not Labelled.....	1	"	"
Cutting out Gland.....	1	"	"
Repairs to Premises.....	3	"	"
FISH TRADE.			
To Cleanse Drains.....	3	"	"
FRUIT TRADE.			
Failing to Label Imported Foods.....	131	"	"
Accumulations of Rubbish in Yards.....	10	"	"
PROVISION TRADE.			
Failure to Mark Imported Goods.....	36	"	"
Accumulations of Rubbish in Yards.....	8	"	"
RABBIT SHOPS.			
Imported Rabbits marked "Fresh Cut".....	9	"	"

MUNICIPAL HOSPITAL.

The policy of the Health Committee in maintaining the Hospital on up-to-date lines has been worth while and its administration, accompanied by the activities of the Medical Superintendent and his staff, has made that standard possible.

The chief measures which were found during the year to require attention were concerned with extensions.

The Isolation Block, which was converted during the year for the treatment of women suffering from surgical tuberculosis, has been fully occupied.

The Maternity Ward has been overtaxed, as can be seen from the figures set out in this Report. This overcrowding has been due to two reasons, viz.: (1) The desire of women to give birth to children in suitable Institutions instead of unsuitable houses, and (2) the policy of the P.A.C. in refusing to give midwives Orders to applicants who live in one room and instead give Maternity Orders for admission to the Maternity Ward of the Municipal Hospital.

This latter practice is one which should receive every support because there are many occasions on which pregnancy is terminated under conditions which are not in accordance with the best medical practice.

An additional Maternity Ward is urgently required.

The wooden huts, which accommodate 80 cases of tuberculosis in an advanced stage, cannot much longer continue to give satisfactory accommodation. They are overcrowded and permitted by the Ministry of Health year by year until better accommodation is found. Permanent brick buildings should take the place of these temporary wooden structures in the grounds of the Municipal Hospital because, apart from any other institutional requirements in the way of sanatoria, there always will be a demand for hospitalisation for the nursing of advanced cases of the disease.

Further structural developments which are required are:—

1. A new general ward for the general extension of the hospital.
2. A separate entrance for Municipal Hospital patients.
3. An out-patient department for observation of patients before and after treatment.
4. An enlargement of the present X-Ray Department which, on account of the increasing number of examinations of cases of tuberculosis is now inadequate.

Although the Health Committee are not responsible for the medical treatment of the male infirm sections of Highfield Institution, the Medical Superintendent is in medical charge. A good proportion of these male infirm inmates are actually ill and require acute hospital provision. It is hoped that this provision will be available by the Health Committee taking over Wards, in the vicinity of the Municipal Hospital buildings, which are at present required by infirm women and used as a Day Room.

The question of hostel accommodation for the nursing staff has not yet been met by the provision of a building within the grounds of the Municipal Hospital. At present the nursing staff are separated either in the Administration Block and Wooden Huts in the grounds or in lodgings near the Hospital.

The relationship which exists between general medical practitioners and the hospital continues to be of a friendly nature but there is still closer co-operation required if the hospital is to fulfil its object as an Institution for the benefit of the medical practitioners and patients alike.

The Medical Superintendent reports as follows:—

The past year has been an exceedingly busy one, and with a few exceptions, shows an increase of work all round. Not only has there been greater activity in the wards, but a further change from the chronic to the acute medical and surgical type of patient.

This has meant the introduction of the most modern and progressive treatments, thus increasing the work and responsibility of both the medical and surgical staffs.

The acute beds remain at the same figure, i.e., 423. There is every indication that the hospital will have to be enlarged to deal with the increased number of admissions, and most certainly a channel through which to pass our convalescents.

At present we are using the chronic sick section—this is not only interfering with the admissions at one end of the storey but the discharges at the other end. There are dozens of cases that could be kept in hospital for a certain period of convalescent observation, but owing to want of accommodation, they have to be sent direct home to conditions that, in many cases, are not conducive to rapid recovery.

NURSING STAFF: The staff is the same as last year with the exception of the resignation of the Assistant Matron, Miss S. I. Ayre, who left to take up the appointment of Matron at the Seaham Hall Sanatorium. Her vacancy was filled by the promotion of Sister A. A. Brown, whose place was again filled by the promotion of Sister Coakley to Home Sister.

EXAMINATIONS: 8 nurses sat for the hospital diploma, and all but one passed.

In the State Final examination 11 nurses entered during the year, and with the exception of one, all succeeded in their first attempt. 14 nurses took their Preliminary State Examination, 12 of these passed and 2 failed.

8 Nurses took their C.M.B. examination, and all passed.

These results give us the following pass percentages:—

Hospital Examination	88%
State Final Examination	91%
State Preliminary Examination	86%
C.M.B. Examination	100%

ADMISSIONS: The total admissions during the year have been 4,622 (males 993, females 1,740, and children to 16 years of age 1,889), against 4,180 in the previous year—an increase of 442.

For the third year I must bring to your notice the large number of children passing through our hands. This year it amounts to roughly 41% compared with 32.2% last year and 41.6% the previous year.

The position is certainly serious, and I consider that greater accommodation for sick children should be provided. On the 31/12/33 there were 92 beds provided for children, and there were 136 children in hospital.

This situation means that children are occupying beds to the detriment of adults. I have frequently this year had to refuse patients owing to want of space.

DISCHARGES: The table of discharges from hospital shows quite a good result for the past twelve months' work, and compares very favourably with other hospitals of this type, for it must

be remembered that a large percentage of our cases have already passed through the hands of surrounding hospitals and are also patients from the hard-hit, poorly nourished, industrial districts—the quality of material, therefore, that we have to work on, is poor to begin with.

IN-PATIENTS' DEPARTMENT: The average daily number of beds occupied during 1933 was 364 as compared with 331 the previous year. The average stay of patients in days has been reduced, viz., 28·6 days against 29·8 for the previous year.

OUT-PATIENTS' DEPARTMENT: The total number of patients seen in this department was 436 compared with 378 last year. The total number of attendances was 5,952 as against 5,187 the previous year.

The indication here is that this department is increasing; preparations for the future must be made—the present accommodation is quite inadequate. The waiting room is too small, and the situation of the department is not good.

PRIVATE PATIENTS: 46 private patients were admitted during the year, the average duration of stay per patient being 16 days. The income from this source roughly amounts to £330, the fee being £3 3s. 0d. per week.

OPERATIONS: This section of the hospital has shown its usual activity. There were 1,357 operations performed during the past year as against 1,014 in 1932 and 763 in 1931, showing a substantial increase of patients and the gradual forging ahead of this department.

THE ELECTRO-THERAPEUTIC AND X-RAY DEPARTMENTS: These departments have been busy. There were 1,351 attendances at the Electro-therapeutic section under Dr. E. Browell, the deputy medical superintendent. The figures for this department are slightly down owing to the fact that the T.B. patients no longer undergo U.V.R. treatment.

In the X-Ray section the tables very ably show you the work that has been done. The number of screenings has increased owing to the influx of T.B. work.

THROAT, EARS AND NOSE DEPARTMENT: This work is still being carried on in connection with the scheme whereby the Aural officer to the Education Authority removes Tonsils and Adenoids of children of school age. There were 478 cases dealt with during the past year.

CANCER CASES: This hospital continues to receive a large number of advanced cancer cases from the district, 125 being admitted during the year, 57 were discharged home with general condition improved—there were 59 deaths.

This section is responsible, to a great extent, for the high death-rate of hospitals of this type.

T.B. SECTION: These wards admit the advanced pulmonary and surgical cases, and therefore it could only be expected that a heavy death-rate be shown from this class of case, but when you come to consider not only the advanced condition of the cases, but the squalid and unfit districts from which they come, the results are most encouraging.

There were 410 cases admitted, 95 died and 264 were discharged, in the majority of cases generally improved.

Of Artificial Pneumo-thorax cases 15 were induced, entailing 328 refills—an increase of 5 patients and 222 refills over the same period of last year. There were 19 cases receiving sanocrysin entailing 136 injections. Thoracoplasty was performed in one case with a very successful result.

The use of Lipiodol for diagnostic purposes has been used during the year with more than satisfactory results.

This section, there is no doubt, is proving its use, although better accommodation is most certainly indicated.

SURGICAL TUBERCULOSIS: There are 29 beds allotted for this class of case, i.e., Ward 5, 13 Male beds and Ward 12 (opened in October, 1932) 16 Female beds. Both these wards have wide balconies where open-air treatment can be carried out day and night.

147 cases were dealt with during the past year, i.e., 77 children, to 16 years, 29 male adults, and 41 female adults.

PATHOLOGICAL WORK: The rapid development of the acute medical side of the hospital has resulted in a large increase in pathological investigations.

A small clinical pathological laboratory is required for the special ward work, other than that done in conjunction with the Royal Infirmary (Pathological Department).

DENTAL CASES: The number of these cases requiring the attention of the dental surgeon, as the attached table will show you, is on the increase. 108 new cases over and above the previous year are recorded, proving the necessity of dental consultation to the medical and surgical staffs.

MATERNITY: This department is now beyond the developmental stage. It, with its attached ante-natal clinic, is firmly established.

To prove its usefulness I will only refer you to the following figures: There were 617 cases admitted during the year, and the average duration of stay was approximately 12 days.

The number of cases delivered by qualified midwives of our own staff were 522, 95 cases admitted requiring the urgent attention of the medical staff.

There is no doubt that this department has not only been a help to the medical practitioners of the district, but undoubtedly has been a sanctuary to which the industrial mother, under-nourished as she is owing to prevailing conditions, can come in the period of distress.

Our figures correspond very closely to other large Municipal Hospitals which have opened maternity sections. The majority are reporting heavy calls upon the accommodation of their maternity blocks.

DEATHS: The total percentage of deaths for 1933 is 11·25 as against 11·41 last year. Again, one has to remember that this Institution admits a large number of last stage cancer and T.B. cases, in which sections together there was a death-rate of 32·4 per cent.

NUMBER OF PATIENTS, 1933.

The following table shows the number of patients treated during:—

		1932.		1933.
In-Patients admitted	... ..	4,180	...	4,622
Out-Patients	... ..	378	...	436
	Total	<u>4,558</u>	...	<u>5,058</u>

IN-PATIENTS.

Average daily number	... ..	331	...	364
Numbers showing the duration of stay of patients:—				
4 weeks or less	... ..	3,213	...	3,715
Exceeding 4 weeks but under 13 weeks	... ..	719	...	687
Exceeding 13 weeks	... ..	202	...	221
		<u>4,134</u>	...	<u>4,623</u>
Average stay of patients in days...		29·8	...	28·6
Average number of beds occupied daily	... ..	331	...	364

OUT-PATIENTS.

Total number of patients seen in O.P. Dept.	... ..	378	...	436
Number of persons subsequently admitted for in-patient treatment	... ..	32	...	29
Number of these persons who had received in-patient treatment in hospital	... ..	319	...	161
Total number of attendances in the O.P. Dept.	... ..	5,187	...	5,952

ANTE-NATAL CLINIC.

Number of women seen in the A.N. Clinic	... ..	458	...	672
Number of attendances	... ..	1,376	...	2,217

ANALYSIS OF ELECTRO-THERAPEUTIC and X-RAY WORK
DURING THE YEAR 1933.

ELECTRO-THERAPEUTIC DEPT.

				Patients.		Attendances.	
				1932.	1933.	1932.	1933.
Ultra-Violet Ray	...	...	...	78	48	948	770
High Frequency	...	...	...	24	25	309	271
Kromayer	...	...	...	12	14	106	310
Total	...	...	...	<u>114</u>	<u>87</u>	<u>1,363</u>	<u>1,351</u>

X-RAY DEPT.

Area Radiographed or Screened.				No. of X-Ray.		No. of Screens.	
				1932.	1933.	1932.	1933.
Chest	...	...	...	378	704	215	738
Ribs	...	...	...	14	6	—	—
Limbs	...	...	...	151	144	—	—
Skull	...	...	...	48	31	—	—
Abdomen	...	...	...	24	21	2	—
Spine	...	...	...	38	29	—	—
Pelvis	...	...	...	36	37	—	—
Pregnancy	...	...	...	76	67	—	—
Bismuth Meal	...	...	...	134	119	—	—
Hip	...	...	...	35	40	—	—
Shoulder Joints	...	...	...	12	20	—	—
Kidney Area	...	...	...	33	14	—	—
Jaw	...	...	...	6	4	—	—
Total	...	...	...	<u>985</u>	<u>1236</u>	<u>217</u>	<u>738</u>

SUMMARY GIVING

SUNDRY STATISTICS FOR 1933 WITH COMPARISONS FOR 1932.

				1932.		1933.
OPERATIONS	...	...	...	1,014	..	1,357
OUT-PATIENTS.						
No. of patients	...	...	...	378	...	436
Attendances	...	...	...	5,187	...	5,952
ARTIFICIAL PNEUMO-THORAX.						
Patients induced	...	...	...	10	...	15
Refills	...	...	...	106	...	328

SANOCRYLIN TREATMENT.

Patients	...	...	...	...	14	...	19
Injections	...	...	...	...	105	...	136

ELECTRO-THERAPEUTIC.

Patients	...	...	...	...	114	...	87
Attendances	...	...	...	...	1,363	...	1,351

X-RAY DEPARTMENT.

X-Rays	...	...	...	...	985	...	1,236
Screens	...	...	...	...	217	...	738

MATERNITY.

Ante-natal Clinic.

New patients	...	...	...	...	103	...	672
Attendances	...	...	...	...	458	...	2,217

Deliveries :—

Normal	...	...	...	...	297	...	522
Instrumental	...	...	...	...	34	...	69
Cæsarian Section	...	...	...	...	21	...	26



MUNICIPAL HOSPITAL.

TABLE SHOWING CAUSES AND AGES OF PATIENTS AT TIME OF DEATH, 1933.

CAUSES OF DEATH.	AGES,									Child. to 16.	Adults.		Total.
	0-1	1-2	2-5	5-16	16-25	25-45	45-65	65-75	75 & up.		M.	F.	
Bronchitis	1	4	...	...	...	...	6	9	8	5	16	7	28
Pneumonia	10	10	2	4	2	5	8	4	2	26	13	8	47
Influenza and Influ. Pneumonia ...	3	3	2	5	3	8	4	4	..	13	12	7	32
Other Respiratory Diseases ...	...	...	...	...	...	...	1	1	...	...	2	...	2
Pulmonary T.B. ...	...	1	2	10	24	37	8	...	...	13	36	33	82
Non-Pulmonary T.B. ...	1	1	...	4	3	3	1	...	...	6	3	4	13
Malignant Disease Acute & Chronic	...	...	...	...	...	7	35	10	7	...	40	19	59
Nephritis ...	...	...	...	1	...	6	14	8	4	1	18	14	33
Arterio Sclerosis...	...	...	...	...	...	...	2	3	...	...	5	...	5
Cerebral Hæm. ...	1	...	...	...	...	4	14	13	5	1	22	14	37
Heart Disease ...	...	...	...	1	5	6	10	5	6	1	17	15	33
Puerperal Sepsis...	...	...	...	...	3	...	...	...	...	...	...	3	3
Other Accidents & Diseases of Preg. ...	...	...	...	...	...	8	...	...	...	...	...	8	8
Gastro-Enteritis ...	32	3	1	1	...	...	...	...	...	37	...	...	37
Congenital Debility and Prem. Birth ...	25	...	...	...	...	...	...	...	...	25	...	...	25
Congenital Spec. Disease.	3	...	...	...	...	...	...	...	...	3	...	...	3
Specific Disease ...	...	...	...	...	...	...	4	1	...	...	3	2	5
Diabetes ...	...	...	...	...	...	...	1	3	...	...	3	1	4
Digestive System	...	...	...	...	...	...	2	...	...	...	2	...	2
Cerebro-Spinal Meningitis	...	...	...	1	...	...	...	...	...	1	...	...	1
Typhoid Fever ...	...	...	...	...	...	1	...	...	...	...	1	...	1
Rheumatic Fever	...	...	...	...	2	2	2	...	...	...	3	3	6
Acute Rheumatism	...	...	...	2	...	2	...	...	...	2	...	2	4
Cerebellar Tumour	...	...	...	...	1	1	...	...	...	...	...	2	2
Lymphadenoma ..	...	...	...	...	2	...	...	...	...	...	2	...	2
Myxœdema ...	...	...	...	...	...	...	1	...	...	...	...	1	1
Spina Bifida ...	1	...	...	...	...	...	...	...	...	1	...	...	1
Sprue ...	...	...	...	...	...	1	...	...	...	...	...	1	1
Pernicious Anæmia	...	...	...	...	...	...	2	...	...	...	1	1	2
Neoplasm ...	...	...	...	...	...	...	2	...	...	...	2	...	2
Exophthalmic Goitre	...	...	...	...	...	1	...	...	...	...	...	1	1
Dysentery (Amœbic)	...	...	...	...	...	...	1	...	...	...	1	...	1
Accidental Death	...	1	2	3	1	6	5	6	13	6	20	11	37
Totals	77	23	9	32	46	98	123	67	45	141	222	157	520

INFECTIOUS AND OTHER DISEASES.

The most conspicuous feature of the year's record was an increase in scarlet fever and measles, and a decrease in diphtheria, enteric fever and cerebro-spinal fever. There is an urgent demand for increased accommodation.

Co-operation with School Medical Services.—Co-operation with the School Medical Services has continued throughout the year. A daily list of infectious diseases has been sent to the School Medical Officer and circulars to the head teacher of the school concerned. Intimation of contacts of school age of cases of infectious disease has also been forwarded. Intimations regarding chickenpox, scabies, measles, mumps and whooping cough have been received from teachers and school nurses, 303 throat swabs were taken at various schools and 7 cases of diphtheria or carriers were detected compared with 442 throat swabs in 1932 when 15 cases of diphtheria or carriers were detected.

Smallpox.—The Borough is to be congratulated on its freedom from smallpox, no cases having been notified in the last four years, the most recent case occurring in July, 1929.

Table showing the STATE OF VACCINATION for the Year ending December, 1932, and preceding years.

Year.	Births Registered.	Total Vaccinated.		Postponed by Medical Authority.	Died previous to Vaccination.	Removal to places unknown or other Districts.	Certificates of (Conscientious Objection) Exemption.
		Succ.	Insusceptible.				
*1923	5322	7470	10	192	501	114	574
1924	5443	5014	34	176	554	8	434
1925	5326	4191	15	71	379	93	577
1926	5109	4056	29	79	378	77	490
1927	4692	3721	22	74	322	56	458
1928	4955	3784	35	63	342	65	666
1929	4620	3375	86	75	296	106	682
1930	4321	3155	40	153	267	133	573
1931	4166	2914	44	157	255	166	635
1932	4084	3070	14	62	180	50	661

*1202 Children were successfully Vaccinated whose Parents had previously obtained exemptions.

Measles.—During the year under review there were 2,259 cases of measles notified, compared with 298 notified in 1932. The total number of deaths certified in 1933 as due to the disease was 23, giving a death-rate of 0.11 as compared with 6 deaths and a death-rate of 0.03 for the previous year.

47 cases of measles were admitted to the Infectious Diseases Hospital, compared with 28 in the previous year; these having been cases of broncho-pneumonia complicating the infection and occurring in homes unsuitable for the nursing or isolation of patients.

This biennial increase was anticipated, and the usual measures taken in the warning of parents of the dangers of exposing young children to infection.

The admission of cases with complications to the Infectious Diseases Hospital puts that Institution to a better use than the admission of non-complicated cases of other minor infections.

In spite of the large number of cases of the disease, on reference to the succeeding table it will be seen that the death-rate was not unduly high.

MEASLES.

Year.	Deaths.	Death-Rate SUNDERLAND.	Death-Rate England and Wales.
1924	21	0·13	0·12
1925	120	0·72	0·14
1926	14	0·08	0·09
1927	50	0·30	0·09
1928	21	0·12	0·11
1929	151	0·82	0·08
1930	13	0·07	0·10
1931	108	0·57	0·07
1932	6	0·03	0·08
1933	23	0·11	0·05

AGES AT DEATH FROM MEASLES.

1933	0-1	1-2	2-3	3-4	4-5	5-10	15 +	Total.
No of Deaths.	4	9	6	2	1	1	—	23

Whooping Cough.—The number of deaths from this disease registered during the year was 4 compared with 32 in the previous year. One case was treated at the Borough Sanatorium compared with nine in the previous year.

DEATHS FROM WHOOPING COUGH MONTH BY MONTH.

1933	Jan.	Feb.	Mar.	Apr.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
4	—	1	—	—	—	1	1	—	—	—	—	1

WHOOPING COUGH.

Year.	Deaths.	Death-Rate SUNDERLAND.	Death-Rate England and Wales.
1924	14	0·08	0·10
1925	62	0·37	0·16
1926	39	0·24	0·10
1927	3	0·02	0·09
1928	28	0·16	0·07
1929	44	0·24	0·15
1930	17	0·09	0·05
1931	27	0·14	0·06
1932	32	0·17	0·07
1933	4	0·02	0·05

AGES AT DEATH FROM WHOOPING COUGH.

1933	0-1	1-2	2-3	3-4	4-5	5-10	10-15	Total.
No. of Deaths.	1	1	2	—	—	—	—	4

Scarlet Fever.—The number of cases notified as suffering from scarlet fever in the Borough in 1933 was 1,518, compared with 957 for the previous year. The case rate was 8·09 compared with 5·09. 26 deaths occurred from the disease. 802 cases were treated at the Borough Sanatorium, this is an increase over the number treated last year. Mild cases of scarlet fever can be adequately treated at home provided that they can be effectually isolated, and it is not desirable that unnecessary admissions to the Sanatorium should take place, the beds thus being able to be put to a better use.

Every case of the disease notified was visited by a Sanitary Inspector in order that the home conditions of the patient might be taken into account as a reason for institutional admission. It is interesting to record that in spite of the larger number of scarlet fever cases remaining at home there has been no increase in the number of second cases in one house recorded as a result of these measures.

Contrary to the belief expressed by many people during this epidemic it not a practical policy for any local authority to provide accommodation for the reception of every case of scarlet fever which becomes notifiable.

SCARLET FEVER.

Year.	Cases Notified.	Case Rate.	Deaths	Death-Rate SUNDERLAND.	Death-Rate England and Wales.
1924	227	1·37	...	·00	·01
1925	174	1·05	2	·01	·01
1926	84	0·51	2	·01	·01
1927	138	0·84	1	·01	·01
1928	175	0·98	...	·00	·01
1929	166	0·90	1	·01	·02
1930	244	1·33	...	·00	·02
1931	447	2·38	2	·01	·01
1932	957	5·09	12	·06	·01
1933	1518	8·09	26	·14	·02

Erysipelas.—Notifications were received of 168 cases of this disease as compared with 101 in the previous year. There were 4 deaths compared with 1 in the previous year.

Encephalitis Lethargica.—Six cases of encephalitis lethargica were notified compared with 2 in the previous year. There were 8 deaths from this disease during 1933.

At the school at the Municipal Hospital the re-education of cases of chronic encephalitis lethargica is still being carried out in an efficient and successful manner.

Acute Anterior Poliomyelitis.—2 cases of this disease were notified during the year compared with 3 in the previous year.

Cerebro Spinal Meningitis.—37 cases of cerebro spinal meningitis (31 of which died) were reported during the year compared with 61 in the previous year.

Diphtheria.—The number of cases notified during the year was 73 as compared with 114 in the previous year, with case rates of 0.39 and 0.61 respectively. There were 3 deaths, equivalent to a death-rate of 0.02 compared with 0.03 for 1932. Of the total cases notified 66 (or 90.4%) were removed to hospital. These cases of diphtheria were distributed almost equally throughout the wards of the Borough, and no special incidence of the disease occurred in any one particular area or school.

The question of the control of diphtheria amongst school children is still an open one. The practice of taking swabs from the nose and throat of school children in immediate contact with a case of diphtheria has been carried out, and also the swabbing of the whole of the children of the school-room on the occurrence of a second case of the disease. Three observations can be made on this practice:—

(1) Cases of Diphtheria will continue to arise until children of school age and under are protected by prophylactic methods.

(2) If swabs from the nose and throat of any class were taken they would probably record positive cases of Diphtheria, although no known case of Diphtheria had occurred in that class, this is due to “carriers” of the disease without any clinical symptoms remaining undetected until this wholesale swabbing takes place.

(3) The positive results of this swabbing are not always cases clinically of Diphtheria which require hospital treatment, although they have in the past been admitted to the wards of the Infectious Diseases Hospital. Before the admission of any of these positive cases, which show no signs clinically of the disease, a test should be made as to whether the organisms found are virulent, this bacteriological test indicates that a child with avirulent organisms can be treated as non-infectious and may return to school. Virulent organisms indicate that the case is infectious to others, and should be excluded from school until such measures have been taken to render the nose and throat non-infectious.

DIPHTHERIA.

Year.	Cases Notified.	Case-Rate.	Deaths.	Death-Rate SUNDERLAND.	Death-Rate England and Wales.
1924	66	0·40	8	0·05	0·06
1925	107	0·64	9	0·05	0·07
1926	80	0·48	7	0·04	0·07
1927	117	0·71	15	0·09	0·07
1928	184	0·99	3	0·02	0·08
1929	145	0·78	9	0·05	0·08
1930	272	1·48	13	0·07	0·09
1931	168	0·89	11	0·06	0·07
1932	114	0·61	5	0·03	0·06
1933	73	0·39	3	0·02	0·06

Typhus Fever.—No cases of typhus fever occurred during the year under review.

Enteric Fever.—There were 7 cases of this disease notified during the year, giving a case-rate of 0·04; there were 10 cases in the previous year. All were removed to the Borough Sanatorium. There was one death, giving a death-rate of 0·01 compared with 3 deaths and a death-rate of 0·02 in the previous year. There appeared to be, on investigation, no contact between one case and another.

ENTERIC FEVER.

Year.	Cases Notified.	Case Rate.	Deaths.	Death-Rate SUNDERLAND.	Death-Rate England and Wales.
1924	5	0·03	1	0·01	0·01
1925	8	0·05	1	0·01	0·01
1926	5	0·03	2	0·01	0·01
1927	10	0·06	2	0·01	0·01
1928	14	0·08	5	0·03	0·01
1929	10	0·05	3	0·02	0·01
1930	20	0·10	8	0·04	0·01
1931	22	0·12	3	0·02	0·01
1932	10	0·05	3	0·02	0·01
1933	7	0·04	1	0·01	0·01

CASES OF ENTERIC FEVER MONTH BY MONTH.

Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct	Nov.	Dec.
—	—	—	—	—	—	—	1	1	1	3	1

Malaria.—One case of malaria was notified during 1933, a seaman who had contracted the disease abroad. In 1932 there was also only one case.

Dysentery.—One case of dysentery occurred during the year. This was the same as in the previous year. The patient was a seaman who developed the disease abroad.

Ophthalmia Neonatorum.—Nineteen cases of this disease were notified during the year compared with 27 in the previous year.

DAY OF ONSET FROM BIRTH.

1933	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th
No. of Cases.	3	1	1	1	1	1	4	1	2	—	—	2	—	2	—

Diarrhœa and Enteritis.—The deaths of children under two years of age from these diseases numbered 72 compared with 50 in the previous year. The death-rate per thousand births of children under two years of age dying from diarrhœa and enteritis during the year was 19·4.

DEATHS FROM DIARRHŒA AND ENTERITIS.

Under 1 month	= 6	6 to 9 months	= 17
1 to 3 months	= 10	9 to 12 months	= 10
3 to 6 months	= 19	1 to 2 years	= 10

DEATHS FROM DIARRHŒA AND ENTERITIS.

Year.	Deaths under Two Years.	Rate per 1,000 Births.	
		SUNDERLAND.	England and Wales.
1924	112	26·4	7·6
1925	109	26·5	8·8
1926	78	20·4	8·7
1927	52	14·3	6·3
1928	61	14·5	7·2
1929	87	21·2	8·1
1930	32	7·5	6·0
1931	52	12·7	6·0
1932	50	12·7	5·9
1933	72	19·4	7·1

This increased death-rate of children through diarrhoea was anticipated as a result of the exceptionally warm Summer which, although conducive to increased health and vitality in older children and adults who took advantage of fresh air and sunshine in toning up an organ of the body, namely the skin, which is apt to be disregarded as a functional organ, was harmful to babies on account of the increased amount of infection to their natural food, namely, milk.

The mean maximum temperatures recorded in July and August were 70° and 68° and the average temperatures of the 4 foot earth thermometer, which is a better guide to the connection between temperature and infantile diarrhoea, recorded in July, August and September, were 57° , 59° and 58° , compared with 55° , 57° and 56° of the previous year. It cannot be too unduly stressed that milk and other foods should be protected from unnecessary contamination. This protection is most needed from flies, the infection from which housewives can help to prevent by burning organic material instead of depositing it into the ashbin. The keeping of horses and pigs near dwelling-houses increases this danger of infectivity. In addition there is the danger of animals in pinning sheds of private slaughter-houses which are in all instances in close proximity to dwelling-houses.

**DEATHS FROM DIARRHOEA AND ENTERITIS AND METEOROLOGICAL CONDITIONS
IN EACH MONTH OF THE YEAR.**

1933.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Deaths	4	1	3	3	1	—	8	6	27	16	8	1	78
Barom. (inches) ..	30·007	29·949	29·906	30·096	29·905	29·957	30·015	30·017	30·123	30·217	30·002	30·225	30·118
Dry Bulb	38·3	40·7	44·9	48·8	51·7	59·1	65·9	64·1	58·5	51·9	44·7	40·1	50·7
Wet Bulb	35·9	39·9	44·5	47·1	49·8	56·9	61·9	59·8	55·6	50·1	43·0	38·5	48·6
Humidity	81·9	81·3	85·9	85·0	87·8	89·7	80·8	77·2	82·7	85·7	89·2	87·8	84·5
Mn. of highest reading	39·3	41·0	48·0	51·5	54·9	63·3	70·4	67·7	61·8	55·1	47·8	42·9	53·6
„ lowest „ ..	32·9	35·2	37·1	41·1	46·4	49·9	56·5	52·6	51·2	44·9	42·9	36·1	43·9
„ daily range ..	6·4	5·8	10·9	10·4	8·5	13·4	13·9	15·1	10·6	10·2	4·9	6·8	9·7
4 ft. Earth Thermo. ..	40·1	41·8	41·8	45·1	48·1	53·0	57·3	59·1	58·1	55·0	49·4	45·3	48·7
Total rainfall (inches).	1·72	2·16	1·02	·80	1·14	1·86	1·71	·99	1·58	3·69	4·16	1·90	22·73

Influenza.—During 1933 there were 89 deaths from influenza compared with 84 in the previous year. The death-rate was 0.47 compared with 0.44 for the previous year.

Year.	Deaths.	Death-Rate SUNDERLAND.	Death-Rate England and Wales.
1924	118	0.71	0.49
1925	53	0.32	0.33
1926	49	0.30	0.22
1927	63	0.38	0.57
1928	31	0.17	0.16
1929	179	0.97	0.74
1930	34	0.19	0.12
1931	78	0.41	0.36
1932	84	0.44	0.32
1933	89	0.47	0.57

INFECTIOUS DISEASES HOSPITAL.

(BOROUGH SANATORIUM.)

The number of cases admitted to the above-named Institution (excluding tuberculosis cases, which are shown on page 96) is as follows:—

Enteric Fever	7
Scarlet Fever	802
Diphtheria	66
Chickenpox	1
Cerebro-Spinal Meningitis	37
Measles	47
Pneumonia (all forms)	31
Erysipelas	31
Encephalitis Lethargica	1
Puerperal Fever	8
Puerperal Pyrexia	9
Ophthalmia Neonatorum	1
Whooping Cough	1
Influenza	5
Diarrhoea	2
Observation Cases	71
Others	15
Out-Patients (Disinfected)	28

Dr. Thorp, Deputy Medical Officer of Health, has been responsible for the treatment of patients suffering from infectious disease at the Borough Sanatorium and writes as follows:—

“Accommodation.—This year the hospital has been working at full pressure and usually with 50% extra beds occupied. Even so, many cases have had to be refused and many have been discharged before convalescence has been complete. In other words the hospital is too small for present-day needs; up to this year it managed to deal with normal demands but this year failed to do so. An epidemic to-day could not be satisfactorily coped with. The time has now come to consider what is to be done. A new 40-bedded modern bed isolation ward would tide matters over for a year or two, and I think its provision cannot be longer delayed. I again emphasize that modern wards are necessary. We have already one or two small uneconomical wards in existence and such wards increase the difficulty of the nursing staff besides requiring more staff than the large units. Increased wards will also mean provision of further sleeping quarters, etc., for additional staff.

Scarlet Fever.—This disease filled our wards completely, several times during the year, 50% of extra beds being utilized on several occasions. The disease was of more serious nature, 15 deaths occurring. Many of the cases that died had first been nursed at home and were therefore removed with complications and sometimes moribund. The cases of serious nature were mainly of septic type, while nephritis, suppurative adenitis, otitis and arthritis were frequently observed.

Many genuine secondary attacks were seen, apart from cases that took scarlet fever in the wards owing to an error of diagnosis outside. It is interesting to note that of the genuine cases of secondary attack there was a marked familial tendency and it was possible to hold up certain apparently convalescent children of a family, in which such a case had occurred and see them develop the secondary attack; such secondary attacks occurred most often in the fifth week, i.e., one week after the child would normally have been discharged.

Anti Scarlatiniform Serum.—I found little clinical evidence as to the efficiency of treatment of scarlet fever by this serum. Certainly there was no reason to believe that the stay in hospital was shortened or complications lessened thereby, and personally I think a judicious dose of anti diphtheritic serum administered in selected cases is more useful. At any rate the type of case now available for test is more likely to demonstrate serum therapy value, than the mild type requiring no treatment at all, that has been prevalent for some years past. With the change of type of disease it was also interesting to note that nurses who had for years escaped infection, probably due to acquired immunity, proved readily susceptible to the more severe infection, possibly this was due in some part to the heavier nursing of more severe and more numerous cases having lowered their resistance.

Erysipelas.—Rather more cases of this disease were admitted, but very few of these were of so severe nature as to warrant their admission.

Other Fevers.—A large number of varied fevers were admitted to the bed isolation ward, of these cerebro spinal fever and puerperal sepsis only occurred in sufficient numbers to comment upon.

Puerperal Sepsis and Pyrexia.—Puerperal Septicæmias. The tale here is a gloomy one, of admissions too late for treatment, of deaths of young wives, or of discharge of patients in a sterile or invalided condition. As I see them there is little to be done and I can only suggest that anything that will bring such cases into hospital and under treatment earlier should be carried out.

Cerebro Spinal Fever.—Accounted for 37 admissions and 30 of these died. Many were admitted too late for any effective treatment. Those who recovered, recovered completely. The death-rate looks heavier than it really is, as only the worst cases appear to come under observation and many of the deaths occur in very young children.

Bed Isolation Ward.—This ward admitted 372 patients and 28 out-patients suffering from varied diseases, and in it were performed 18 operations, viz.:—

3 Mastoid.	1 Double Cervical Gland incised.
6 Empyema.	7 Teeth extractions.
1 Tracheotomy.	

as well as 230 lumbar punctures and 27 cistern punctures.

This ward therefore has made it possible to cope with the large amount of general fevers and has often been overcrowded, thereby running risks of cross infection. Much praise is due to the staff of the ward that none has taken place.

Cases Admitted.—Total 372.

60 Diphtheria.	6 Scarlet and Measles.
37 Cerebro-Spinal Fever.	14 Scarlet Fever.
31 Erysipelas.	6 Empyema.
13 Puerperal Cases.	4 Scarlet and Erysipelas.
49 Meningitis.	4 Chickenpox and Pneumonia.
17 Bron. Pneumonia.	1 Tuberculosis and Enteric.
8 Enteric.	1 Measles and Diphtheria.
3 Scarlet and Diphtheria.	1 Measles and Tuberculosis.
6 Mastoid.	1 Whooping Cough.
3 Scarlet and Chickenpox.	5 Influenza Pneumonia.
50 Measles.	1 Tubercular Chest and Gland.
1 Dermatitis	49 General Diseases.
1 Dysentery.	

Patients admitted from other Authorities (Included).—

12 Cerebro-Spinal Fever.
2 Erysipelas.
1 Dermatitis.

General Remarks.—The disastrous effects of rickets in debilitating the system of children, remarked by other writers, and rendering them bad subjects for infectious diseases was well demonstrated in many of our patients suffering from measles, scarlet fever, cerebro spinal fever and pneumonia. The prognosis for such children was always weighted against them.

Patients still in Hospital on 31st Dec., 1933.—146.

Deaths within 24 hours after Admission.—16.

Deaths.—Total 85.

30 Cerebro-Spinal Fever.	1 Croup.
6 Tuberculosis.	4 Pneumonia.
5 Meningitis.	6 Measles.
3 Bron-Pneumonia and Meningitis.	1 Septic Umbilicus.
15 Scarlet Fever.	2 Erysipelas.
1 Meningitis and Scarlet Fever.	1 Abscess of Brain.
6 Puerperal Cases.	1 Scarlet Fever and Diphtheria.
1 Diphtheria and Cerebro- Spinal Fever.	1 Diphtheria.
	1 Scarlet Fever and Measles

An analysis of the deaths occurring in the institution gives subject for thought. There were 85 deaths, being a death-rate of 6.5%, which compares very favourably with that of similar institutions. Sixteen of these occurred within 24 hours of admission, indicating that their removal to the hospital had been too long delayed, a fault occurring in about 40% of the fatal cases, and in most cases this is due to late sending for the doctor by parent or midwife. If this delay in admission to hospital be eliminated the death-rate could be diminished, particularly in the case of pneumonia, puerperal sepsis and cerebro spinal fever."

AMBULANCE WORK AND DISINFECTION.

Ambulances.—The Council possesses two motor ambulances for the removal of cases of infectious diseases. The "Austin" ambulance is reserved for the removal of simple infectious diseases and tuberculosis, whilst the "Morris" ambulance is used entirely for the removal of cases of smallpox to Whiteleas Hospital, the removal of smallpox contacts to the Borough Sanatorium for the purposes of disinfection, and the removal of infected bedding to the Sanatorium and its return cleansed to the homes.

These ambulances have outlived their years of safe transport and require replacing by new ones.

The ambulances have also been used during the past year for the transmission of laundry between the Maternity Home and the Children's Hospital laundry and also for the collecting and transmission to a special school of children who have suffered from surgical tuberculosis and are not fit to attend an ordinary elementary school.

The following cases were removed by ambulance to the Borough and Grindon Sanatoria during 1933:—

Scarlet Fever	802
Diphtheria	66
Enteric Fever	6
Puerperal Fever	8
Pneumonia	31
Tuberculosis	27
Encephalitis Lethargica	1
Measles	47
Cerebro-Spinal Meningitis	37
Erysipelas	31
Other Diseases and Observation Cases.....	105
	<hr/>
	1161
	<hr/>

In addition to the above, 66 cases were removed from their homes to the Municipal Hospital, 42 cases were returned to their homes, and 24 cases removed and returned from Wolsingham and Stanhope Sanatoria.

The total mileage run by the "Austin" ambulance (simple infectious diseases) was 21,874, and by the "Morris" ambulance (disinfection, etc.) 12,720.

Disinfection.—The following work has been done by the Disinfecting Attendant:—

Number of rooms disinfected	...	...	2,184
Number of calls for bedding only	...	...	272
Calls and enquiries	...	...	178
Disinfection at Schools—Class Rooms	...		11
„ „ „ —Cloak Rooms	...		2

The work carried out at the Disinfecting Station at the Borough Sanatorium is given in the following table and shows an increase in the amount of work carried out during the previous year:—

Articles.	Disinfectcd.	De- stroyed.
Beds.....	915	49
Mattresses.....	481	6
Blankets.....	1006	...
Pillows.....	1261	2
Quilts.....	699	...
Sheets.....	620	20
Bolsters.....	610	4
Sundries.....	1711	96
	7303	177

BACTERIOLOGICAL WORK.

The following is a complete summary of the work done for the Health Department (excluding Port Sanitary) by the Department of Pathology and Bacteriology at the Sunderland Royal Infirmary under the supervision of the Borough Bacteriologist:—

Description of Examinations.	Number of Specimens.
Throat Swabs for Diphtheria Bacillus.....	3289
Throat Swabs for Virulence Test.....	1
Sputum for Tubercle Bacillus	1886
Sputum for Tubercle Bacillus, Antiformin Method.....	3
Milk for Guinea Pig Inoculation.....	104
Milk for Bacterial Count.....	6
Agglutination (Widal) Test for Typhoid Group.....	58
Cerebro-Spinal Fluid.....	203
Blood for Organisms.....	6
Urine.....	3
Water for B.Coli	11
Graded Milk	83
Faeces, Bacteriological Examination	2
Water from Swimming Bath	8
Miscellaneous.....	84
TOTAL.....	5747

The closest co-operation has taken place between the Public Health Department and the Bacteriological Department of the Royal Infirmary, Sunderland. Graded milks have been tested on 83 different occasions. The number of swabs examined from the throats of contacts of diphtheria is 3,289 compared with 3,758 in the previous year.

Results of examinations show that tubercle bacilli have been present in 9 instances out of 104 milks examined.

Work done at the Bacteriological Department at the Royal Infirmary, Sunderland, in connection with the Venereal Diseases Regulations:—

Nature of Test.	Number of Tests.
For Detection of Spirochætes:—	
For Treatment Centre.....	3
For Practitioners.....	...
For Detection of Gonococci:—	
For Treatment Centre.....	363
For Practitioners.....	204
For Wassermann Reaction:—	
For Treatment Centre.....	576
For Practitioners.....	1371
Other Examinations:—	
For Treatment Centre.....	160
For Practitioners.....	13
TOTAL.....	2690

VENEREAL DISEASES.

There were 20 deaths certified during the year as due to syphilis, which is equal to a death-rate of 0.10 per 1,000 of the population compared with 13 deaths and a death-rate of 0.07 for the previous year.

Dr. Rowstron reports as follows:—

Work of the Treatment Centre.—The total number of new cases registered at the Centre at the Royal Infirmary from Sunderland contributory areas was 850 as compared with 821 for the previous year.

There is an increase of 19 in the number of new syphilis cases, and of 27 in the gonorrhœa cases, and a decrease of 80 in the non-V.D. cases.

The total attendances of all cases numbered 27,214 compared with 29,171 in the previous year.

65 expectant mothers attended the ante-natal department, of whom 43 received treatment.

Arrangements have been made to provide additional accommodation.

Dr. Reid has been appointed Clinical Assistant vice Dr. G. F. Smith, resigned.

The following cases have been sent by the institutions named:—

	S. C.	Syphilis.	S. & G.	Gono.	N.V.D.	Total.
Welfare Centres (Borough)...	...	6	2	23	27	58
Royal Infirmary.....	...	29	2	15	11	57
Children's Hospital.....	...	3	1	—	3	7
Monkwearmouth Hospital....	1	1	—	1	1	4
Highfield Hospital.....	...	6	1	2	2	11
Eye Infirmary.....	...	15	—	—	—	15
Education Committee.....	...	2	—	—	6	8
St. Agathas.....	...	1	—	1	—	2
TOTALS.....	1	63	6	42	50	162

74 sailors, of whom 29 were foreigners, received treatment during the year. 52 contacts were dealt with, of whom 25 required treatment.

SUNDERLAND TREATMENT CENTRE.

Sunderland
Residents
Treated at
under-
mentioned
Centres.

	SUNDERLAND.	Durham.	South Shields.	Newcastle.	Males.	Females.	Total.	West Hartlepool.	Newcastle.	South Shields.
Number of persons from each area dealt with during the year at or in connection with the Out-Patient Clinic for the first time and found to be suffering from:—										
Syphilis.....	139	76	3	...	145	73	218	...	1	1
Soft Chancre.....	4	4	...	...	4	4	8	...	...	...
Gonorrhœa.....	222	138	4	2	270	96	366	1	1	2
Condition other than Venereal.....	184	73	1	...	169	89	258	...	1	2
TOTALS.....	549	291	8	2	588	262	850	1	3	5
Total number of attendances at the Out-Patient Clinic of all Patients residing in each area	16239	10826	143	6	18158	9056	27214	1	63	65
Aggregate number of "In-Patient days" of all Patients residing in each area.....	595	561	20	...	600	576	1176	...	...	...
Number of doses of Arsenobenzol Compounds given to Patients residing in each area in the Out-Patient Clinic and the In-Patient Dept	1729	1331	16	...	...	...	3076	...	9	17

The undermentioned table shows the times at which the clinic is open:—

For MEN.

Mondays, 6-15 p.m.
Wednesdays, 6 p.m.
Thursdays, 10 a.m.
Fridays, 2-30 p.m.
Saturdays, 10 a.m.
Irrigations daily at 10 a.m.
and 5 p.m. except Tuesday
and Friday mornings.

For WOMEN.

Tuesdays, 10 a.m.
Tuesdays, 2-30 p.m.
Wednesdays, 2-30 p.m.
Fridays, 10-30 a.m.
Irrigations daily at 8-30 a.m.
and 6 p.m.



TUBERCULOSIS.

There is no improvement in the position of the accommodation for cases of tuberculosis in the Borough as no decision has been made as to the provision of a Sanatorium. The temporary withdrawal of the Turnbull Pavilion at the Infectious Diseases Hospital, which was used for women suffering from tuberculosis, has been rendered permanent as the Hospital has been taxed to the utmost with other cases of infection. In order to reduce the waiting list for institutional treatment, cases have been sent to Wolsingham, Stanhope and the Isle of Wight, according to the type of disease and requirements. The question of a conjoint sanatorium with other North-East Coast towns has again been raised and was further considered on a suggestion from the County Borough of Middlesbrough that the Grey Towers Estate, Nunthorpe, which had been presented to the Corporation of Middlesbrough, should be utilised as a site for this conjoint Sanatorium. The area is suitably placed, developments along the lines of single-storey pavilions can take place, and its distance from Sunderland is not too great to make the situation unworthy of investigation. Whether the Council decide to build a Sanatorium of their own, whether they decide to join in with other North-East Coast towns on a site of their own selection, or whether they decide to join in with the scheme at Middlesbrough, is immaterial; what is important is that some definite decision should be arrived at as early as possible and a start made in the provision of accommodation for cases of tuberculosis at present housed in unsuitable conditions.

In connection with the housing of families in which there is a case of tuberculosis, the Committee have decided that special priority should be given in obtaining a Council house. Not only that but a special type of Council house should be built in suitable selected areas in the Borough where protection from North-East winds is naturally obtained; the rooms should have

more air space than usual and a balcony facing South and protected from the North should give a case of tuberculosis as much fresh air as possible. Sixty families are now waiting for this type of house.

The total accommodation at the institutions provided by the Corporation for treatment of tuberculosis of all forms on December 31st, 1933, was:—

	Males.	Females.	Children.	Total.
Borough Sanatorium.....	18	—	—	18
Grindon Hall.....	—	20	30	50
Municipal Hospital (Pulmonary)	40	32	8 Cots	80
(Non-Pulmonary)		16		16

Statistics.—During the year 289 cases of pulmonary and 186 of non-pulmonary tuberculosis were notified, making a total of 475 cases. Of these, 268 were males and 207 females. Compared with the previous year, this is an increase of 7 in the number of notifications of pulmonary tuberculosis and an increase of 36 in the number of non-pulmonary.

The total number of names on the register on December 31st, 1933, was 1,095 as compared with 1,143 at the corresponding period of the previous year.

Nine cases of tuberculosis were discovered from the death returns not to have been notified, compared with 2 for the previous year.

The following tables show the number of notifications of tuberculosis received during the year in age-groups:—

PULMONARY TUBERCULOSIS.

Ages.	0-1	1-5	5-15	15-25	25-35	35-45	45-55	55-65	65+	Totals.
Males	1	11	18	53	27	30	19	8	1	168
Females ...	...	6	18	31	27	25	11	3	...	121
Totals	1	17	36	84	54	55	30	11	1	289

NON-PULMONARY TUBERCULOSIS.

Ages.	0-1	1-5	5-15	15-25	25-35	35-45	45-55	55-65	65+	Totals
Males	2	20	39	16	10	6	6	1	...	100
Females ...	1	12	35	17	12	5	2	2	...	86
Totals	3	32	74	33	22	11	8	3	...	186

Of the total cases of pulmonary tuberculosis notified during the year, 81.3 per cent. were persons over 15 years of age, whereas in non-pulmonary tuberculosis 58.6 per cent. were under 15 years of age.

The total deaths from tuberculosis of all types during the year numbered 222, of which 114 were males and 108 females; last year the total number of deaths was 231, comprising 122 males and 109 females. Pulmonary tuberculosis accounted for 183 (or 82.4 per cent.) of the deaths from tuberculosis, and non-pulmonary 39 (or 17.6 per cent.). The death-rate from pulmonary tuberculosis was 0.97 per 1,000 of the population, and from non-pulmonary 0.21, making a total death-rate of 1.18 from all forms of the disease.

Care Work.—Extra nourishment and clothing has been supplied to patients awaiting admission to, or after discharge from, the Borough Sanatoria. This work has been carried out by a Committee composed equally of members of the Health Committee and members of the Guild of Help. The amount of money expended upon Care Work is supplied by the Health Committee, and each individual case for assistance is examined by the Clinical Tuberculosis Officer who allocates the amount of assistance to be given.

The following is an extract from the Annual Report of the Care Committee:—

During the year the Clinical Tuberculosis Officer has recommended 173 persons for extra nourishment. All of these have been visited, and over 250 reports received from voluntary Visitors.

Clothing has been provided by the Guild of Help for 75 cases to the value of £52 5s. 5d., and crutches for two cases.

Three concerts have been arranged during the year by members of Toc H and the League of Women Helpers' Concert Party, Colonel D. F. Todd and the Gas Company Party. All these entertainments have been much enjoyed by the patients at Grindon Hall, who, on these occasions, are joined by the men from the Sanatorium huts.

The Invalid Children's Aid Association School at Westfield House continues to help the young children suffering from surgical tuberculosis, who are excluded from the ordinary Schools by reason of their disability. 21 children have benefited by the capable tuition of a reorganised staff of High School Old Girls. The Committee's most grateful thanks are given for this valuable help to their work.

A new branch of the service, that of allotments for tuberculosis patients, has been started this year with a grant of £5 from the "Hope in the Darkness" Committee. Mr. Johnson, Secretary of the Wearside Allotments Society, addressed a meeting of suitable cases at the Health Office and informed the meeting that the Society were willing to help them to obtain allotments by offering (a) easy terms of payment, (b) pieces of land of suitable sizes, (c) help with the heavy digging, etc. Eight men asked to have their names put down for vacant allotments, and two already had gardens, one of whom has since been helped both by the Care Committee and the Unemployed Social Committee who, with the man's assistance, constructed a hut for use as a shelter on his allotment.

To all who have in any way helped in this great work of Care for Tuberculosis the Committee offer their most cordial thanks and ask one and all to help them in the future to achieve their object.

The great need for further grants for the education of cases suffering from tuberculosis has been felt, as there are young people of school age who cannot attend Elementary Schools owing to some tuberculous condition, which although not causing sufficient illness to warrant Hospital treatment, nevertheless is sufficient in the absence of an Open-Air School to debar them from their normal and necessary education. There appears to be no suitable Institution available for these boys and girls, who are too old for instruction under the I.C.A.A. School.

The members of the Care Committee have always felt that it was regrettable that patients discharged after Sanatorium treatment should return to totally unsuitable homes and surroundings. It is therefore reassuring to know that special houses on open-air lines are being constructed for families in which cases of tuberculosis occur, so that the necessary care can be maintained.

Year.	DEATHS.						NOTIFICATION					
	Pulmonary Tuberculosis.		Non Pulmonary Tuberculosis.		All Forms of Tuberculosis.		Pulmonary Tuberculosis.		Non Pulmonary Tuberculosis.		All Forms of Tuberculosis.	
	Deaths.	Death Rate.	Deaths.	Death Rate.	Deaths.	Death Rate.	Cases.	Case Rate.	Cases.	Case Rate.	Cases.	Case Rate.
1924	168	1.02	67	0.40	235	1.42	238	1.44	90	.54	328	1.98
1925	199	1.20	53	0.32	252	1.52	325	1.95	152	.91	477	2.87
1926	177	1.08	62	0.38	239	1.46	284	1.70	124	.74	408	2.45
1927	162	0.98	62	0.38	224	1.36	300	1.83	184	1.12	484	2.95
1928	204	1.14	58	0.33	262	1.46	271	1.52	212	1.19	483	2.71
1929	190	1.03	94	0.51	284	1.54	238	1.29	181	0.98	419	2.27
1930	124	0.67	127	0.69	251	1.36	259	1.41	138	0.75	397	2.16
1931	204	1.08	62	0.33	266	1.41	186	0.99	86	0.46	272	1.45
1932	174	0.94	57	0.31	231	1.25	282	1.51	150	0.81	432	2.32
1933	183	0.97	39	0.21	222	1.18	289	1.54	186	0.99	475	2.53

Artificial Sunlight Therapy.—The following is a table showing the work done at the Light Treatment Centre in connection with tuberculosis:—

Number of Patients attended.....84.

NUMBER OF PATIENTS ATTENDED FOR:—

T.B. Lungs	—	} = 84
Bones and Joints	2	
Lupus	34	
Other	48	

RESULT OF TREATMENT:—

Discharged cured	27	} = 84
„ improved	39	
„ no change in condition ...	—	
Ceased to attend; Referred to Hospital	4	
Still attending	14	

Public Health (Prevention of Tuberculosis) Regulations, 1925.

No action was taken under the above-named Regulations during the year, inasmuch as no case of tuberculosis was notified in a person actually engaged in handling milk.

Public Health Act, 1925, Section 62.

The above-named section deals with the removal to hospital of persons suffering from tuberculosis. From time to time during the year it has been reported that persons suffering from tuberculosis in an infectious state were living in accommodation wherein proper precautions to prevent the spread of infection could not be taken, and that serious risk was caused to other persons, especially to children. Under the above-named Act the local authority, providing suitable hospital accommodation exists for the reception of that person, can apply to the magistrates to make an order to remove the person to hospital for a period not exceeding three months. During the year a man and his son were removed under this section, both suffering from tuberculosis in an infective condition and having no suitable means for isolation in their own rooms; as the physical condition of these people did not improve a further appeal was made to the magistrates to extend their stay.

Dr. Beal reports as follows:—

“During the year there has been an increase in the new cases seen at the Dispensary, the numbers being 674 cases for 1933 as compared with 641 seen in 1932, but the number found to be tuberculous was less, i.e., 333 definite cases in 1933 as compared with 367 in 1932, the inference being that more “suspect” cases are being sent for an opinion.

Of the new cases seen 249 were suffering from pulmonary tuberculosis and these were made up of 145 T.B. + cases and 104 cases classified as T.B.—.

Pleural Effusions (24 Cases).—Included in the T.B.— cases were 23 pleural effusions and I feel it would be of interest to record some details of these cases. In this group there were 21 males and 3 females and their classification was T.B.— 23,

T.B. + 1, the effusion was left sided in 18 cases and right sided in 6 cases, there was a history of contact with a known case of tuberculosis in 3 instances. The average age of the cases was 23.1 years. These cases all received institutional treatment; 9 cases were treated in hospital, 7 cases were given sanatorium treatment and 8 cases received hospital treatment and were later transferred to a sanatorium. In 18 instances the diagnosis of tuberculous pleural effusion was confirmed by pathological examination of fluid withdrawn from the chest, in the remaining 6 cases the presence of fluid was confirmed by radiographic examination. The number of cases requiring aspiration to relieve symptoms was 6 and varying amounts of fluid had to be withdrawn. It is too early to draw any conclusions as to the ultimate end of these cases, but at a later date I hope to follow these cases up.

Children.—During the past year there have been 43 cases of pulmonary tuberculosis notified in children from the ages of 0—15 years, and the appended table gives an analysis of the position in regard to these cases:—

ANALYSIS OF CASES OF PULMONARY TUBERCULOSIS NOTIFIED 1933
IN CHILDREN, AGED 0—15 YEARS.

	Number.	T.B. + Stage.			Dead.	T.B. Minus.	Dead.
		I	II	III			
Male.	22	...	2	1	2	19	11
Female.	21	...	2	4	3	15	5
Total.	43	...	4	5	5	34	16

Of the 34 cases classified as T.B.—, 6 cases died before they could be examined, and 6 cases were found to be suffering from tuberculous pleural effusion. In 15 instances the diagnosis was confirmed by radiographic examination and in two instances autopsy confirmed the physical findings. It is interesting to note that one of the autopsies was on a child of 10 months, who had been living in contact with a positive sputum case.

Contacts.—The number of contacts examined has again remained high and out of 914 contacts examined, 56 were found to be tuberculous, equal to 6.1%. In the appended table the classification of the type of tuberculosis from which the contact was suffering is set out.

Classification.	Under 15 years of age.		Over 15 years of age.		Total.
	M.	F.	M.	F.	
T.B. +	...	3	10	12	25
T.B. -	3	8	4	4	19
Non. Pul.	4	6	1	1	12

Home Visitation.—Home visitation has been carried on as outlined in the 1932 Report, and during the year the health visitor has paid 2,648 visits.

Visitation has been the means of keeping track of contacts and also cases in which there was gross overcrowding.

The Municipal Hospital.—The 80 beds provided for the treatment of pulmonary tuberculosis have always been fully occupied and the waiting list has always been full. The 16 bedded ward for the treatment of non-pulmonary tuberculosis in females has been fully occupied.

The X-ray examination of all Dispensary cases is still carried out at this Hospital and during the year 199 films have been taken.

Special methods in the treatment of pulmonary tuberculosis, as outlined in the 1932 Report, have been continued.

Artificial Pneumothorax.—This form of treatment has been continued during the year, in 11 cases the induction of artificial pneumothorax was attempted and was successful in 9 cases.

In regard to the 6 cases that were receiving this treatment in 1932, 3 continue to make satisfactory progress, 1 case discontinued treatment at his own request, 1 case, having received the maximum benefit from the treatment and also having had the phrenic nerve evulsed, was treated by thoracoplasty, an operation in which portions of rib are removed and the chest wall mobilised and compressed, 1 case died, this was in some measure not unexpected since the patient was coloured and in the coloured races the course of tuberculosis is notoriously rapid.

The position in regard to the 9 cases induced in 1933 is as follows:—6 cases are making excellent progress, although in two cases fluid developed in sufficient quantity to require withdrawal. One case declined further treatment, another case left the Sunderland area and is, I understand, having her treatment carried on by another Authority, and one case died as a result of a spread of disease in the other lung, in spite of ancillary measures, i.e., Sanocrysin.

The appended table shows the results of the successful inductions at the end of 1933, since the treatment was commenced in 1932, and of course does not represent the total number for whom an attempt to provide this form of treatment was made.

During the year 312 refills have been given.

RESULTS OF ARTIFICIAL PNEUMOTHORAX TREATMENT SINCE 1932.

Total No. of Cases.	Average Age.	Male.	Female.	Stage.				Side.	
				T.B. +			T.B. -	Right.	Left.
				I	II	III			
15	24.6/12.	4	11	..	10	3	2	7	8

Condition.	Dead.	Improv'd	Worse.	Station- ary.	Left Area.	Arrest'd	Discon- tinued.
Under 1 year	2	6	...	...	1	...	2
After 1 year	...	3	...	...	...	...	1

Sanocrysin.—During the year the use of this drug has been continued in selected cases, with satisfactory results and has been found to be a useful adjunct to treatment.

Surgical Treatment.—In one case a partial thoracoplasty has been carried out and one of our cases receiving treatment at the Ventnor Sanatorium has had a phrenic exulsion and thoracoplasty performed.

During the year two cases were detained in the Municipal Hospital tuberculosis wards on a Magistrates' Order under Section 62, Public Health Act, 1925.

Borough Sanatorium.—The beds in the Bewlay Hut have been fully occupied during the year, and a waiting list has always been present.

BOROUGH SANATORIUM.

	Males.		Totals
	Under 15	Over 15.	
Remaining Jan. 1st, 1933....	...	18	18
Admitted.....	1	38	39
Discharged.....	...	37	37
Died.....	...	2	2
Remaining Jan. 1st, 1934 ...	1	17	18

Grindon Sanatorium.—Full use has been made of this Institution during the year; the 30 beds for surgical tuberculosis in children have always been occupied and the 20 beds for pulmonary female cases have been taxed to the maximum.

GRINDON SANATORIUM.

	Males.		Females.		Totals.
	Under 5.	Over 5.	Under 5.	Over 5.	
Remaining Jan. 1st, 1933....	4	9	3	30	46
Admitted.....	16	19	12	68	115
Discharged.....	15	24	12	66	117
Died.....	...	...	...	1	1
Remaining Jan. 1st, 1934 ...	5	4	3	31	43

Stanhope Sanatorium.—Pulmonary male cases have been sent to this Institution to relieve the pressure on the beds at the Borough Sanatorium and also to reduce the waiting time.

STANHOPE SANATORIUM.

	Males.	Males.	Totals.
	Under 15	Over 15.	
Admitted	1	19	20
Discharged.....	1	9	10
Died .. .....	...	1	1
Remaining Jan. 1st, 1934 .....	...	9	9

Wolsingham Sanatorium.—One pulmonary female case was admitted to this Institution during the year.

Ventnor Sanatorium.—In special instances cases have been sent to Ventnor Sanatorium, Isle of Wight, and the results have been very successful, but the type of case is an early case that can stand the journey and also be willing to settle so far away from Sunderland.

VENTNOR SANATORIUM.

	Males.	Females.	Totals.
	Over 15	Over 15.	
Admitted	2	1	3
Discharged	2	...	2
Died .....	...	...	...
Remaining Jan. 1st 1934 .....	...	1	1

The work of the Dispensary is best seen in tabular form and is compared with the work performed in 1932 in the table appended:—

	1932.		1933.
Total Number of Attendances at Dispensary.....	6,186	...	6,876
Total Number of New Cases	641	...	674
Number found to be Tuberculous	367	...	333
" " " " Doubtfully Tuberculous	3	...	2
" " " " Non-Tuberculous	271	...	339
Number of Pulmonary Cases	267	...	249
" " " " with Positive Sputa.	151	...	148
" " " " with Negative Sputa	116	...	106
Number of deaths of Pulmonary Cases notified in 1933	72	...	83
(1) With positive sputa	53	...	55
(2) With negative sputa	19	...	28
Number of Non-Pulmonary Cases notified in 1933	152	...	140
Number of Non-Pulmonary Deaths of Cases notified in 1933	14	...	18
Total Number of Cases examined	4,396	...	4,249
Number of Contacts examined	1,098	...	914
" " " found to be Tuberculous ...	52	...	56
Total visits by Tuberculosis Health Visitor	2,944	...	2,648
Number of visits to Homes by Tuberculosis Officer	113	...	158
Number of visits to Institutions by Tuberculosis Officer	52	...	106
Number of Personal Consultations by Tuberculosis Officer	22	...	45
Number of X-Ray Examinations by Tuberculosis Officer	146	...	199
Number of Sputum Examinations from the Dispensary	567	...	644
Number of Patients on Domiciliary Treatment...	129	...	134
Number of Cases of Overcrowding and Sanitary Defects reported to the Medical Officer of Health	95	...	85
Number of Sputum Flasks given out	84	...	60

Co-operation with the School Medical Service has been continued as in the previous years and an account of this is shown in the accompanying table.

CHILDREN OF SCHOOL AGE EXAMINED AT TUBERCULOSIS DISPENSARY, 1933.

	NEW CASES--184.			OLD CASES--332.		
	M.	F.	Total.	M.	F.	Total.
Sent by S.M.O.....	17	19	36	...	...	...
Found to be Non-Tuberculous.	64	49	113	1	3	4
Found to be Tuberculous....	39	31	70	181	147	328
Found Doubtful Tuberculous..	...	1	1	..	...	...
Hospital for Observation.....	9	7	16	...	2	2
Sanatorium for Observation..	3	8	11	3	2	5
PULMONARY :—	9	8	17	27	31	58
T.Bacc in sputum.....	2	3	5	4	11	15
Had Sanat. Treat.						
Once.....	7	6	13	7	12	19
Twice.....	1	1	2	3	2	5
Arrested, fit for school .....	...	...	...	9	3	12
Recovered, fit for school .....	...	...	...	1	2	3
Died.....	2	5	7	1	4	5
NON-PULMONARY :—	30	23	53	154	116	270
Bone.....	5	5	10	45	44	89
Glands.....	17	12	29	71	48	119
Skin.....	3	1	4	16	13	29
Abdomen.....	...	2	2	18	11	29
Other.....	5	3	8	4	...	4
Had Ultra-Violet Light						
Treatment.....	7	6	13	13	9	22
,, Sanat. Treat. once.....	2	3	5	6	6	12
twice.....	...	...	...	..	2	2
,, Hospital treat.....	16	13	29	12	3	15
,, Hosp. & San. Treat.....	2	2	4	1	1	2
Arrested, fit for school	12	11	23	104	79	183
Recovered, fit for school .....	...	...	...	37	19	56
Died.....	5	3	8	1	...	1

	M.	F.	Total.
CONTACTS EXAMINED—	200	147	347
Found to be Tuberculous.....	4	14	18
Found Doubtful Tuberculous.....	...	..	...
Found to be Non-Tuberculous.....	196	133	329
Had Sanatorium for observation	3	1	4
,, Hospital	3	3	6
,, Hospital and Sanatorium Treatment.....	4	14	18
T.B. in Sputum.....	...	3	3
Found not T.B. after Sanatorium or			
Hospital observation	5	4	9
Died.....	1	1	2

Total Attendances : Old and New Cases.....1,904.

TUBERCULOSIS [NON-PULMONARY] PRIMARY CASES, 1933, AGE GROUPS AND SITE.

LOCALISATION: AGE.	0-5		5-10		10-15		15-20		20-30		30-40		40-50		50-60		60 +		Totals.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Brain and Meninges.....	3	2	5	4	2	...	1	1	11	7
Glands: Cervical.....	12	3	15	9	8	7	2	5	3	7	4	6	1	2	...	1	...	46	40	
" Mesenteric.....	1	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	4
" Axillary.....	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
" Inguinal.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peritoneum.....	2	2	1	2	1	3	3	...	1	4	...	2	...	...	...	...	...	8	13
Tuberculosis: Intestines.....	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	2
Joints: Spine.....	...	2	2	1	...	...	...	...	...	...	2	...	...	...	...	...	...	4	4
" Hip.....	1	1	2	2	1	...	1	...	2	...	...	...	...	...	...	...	...	7	3
" Elbow.....	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
" Ankle.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Wrist.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Shoulder.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Knee.....	1	...	...	...	1	1	...	1	1	...	...	...	...	...	...	...	...	3	2
Bones: Various.....	...	...	...	...	1	1	...	...	...	1	...	1	...	...	1	...	...	2	2
Skin.....	...	1	1	...	2	1	1	...	...	...	1	1	1	1	1	...	1	7	5
Gen'to-Urinary.....	...	...	...	...	...	...	...	...	2	2	1	...	...	...	...	...	...	3	2
Unclassified.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals.....	21	14	26	19	15	13	9	7	10	17	8	10	2	3	2	2	1	1	94	86

MATERNITY AND CHILD WELFARE.

Statistics.—The number of children under one year of age who died during 1933 was 331 (males 176 and females 155) which represents an infant mortality rate of 89.

The rate for the previous year was 95 and the average rate for the last ten years was 98, so that for the year under review there has been a decrease.

The list of causes of infant deaths is set out on page 107.

Deaths in Age Groups.—Of the total (331) infant deaths 95 or 28.7 per cent. took place in the first week of life, 145 (43.8 per cent.) in the first month, 37 (or 11.2 per cent.) between one and three months, 62 (or 18.7 per cent.) between three and six months, 50 (or 15.1 per cent.) between six and nine months, and 37 (or 11.2 per cent.) between nine and twelve months.

Neo Natal Death-rate—The number of deaths of infants occurring in the first month of life was 145, equal to a death-rate per 1,000 births of 39.1 compared with 40.7 for 1932.

Illegitimate Death-rate.—Of the 136 illegitimate births, 17 (or 12.5 per cent.) died before reaching the age of one year, which is equal to an infantile death-rate of 125. This figure shows the increased mortality rate among illegitimate children and emphasises the need for medical supervision for unmarried mothers.

Still-Births.—There were 150 still-births, giving a mortality rate of 40 per thousand births, compared with 40 per thousand for the previous year, viz.:—142 legitimate (82 males, 60 females) and 8 illegitimate (4 males and 4 females).

The following table shows the causes of still-births during the year:—

Weakness of mother	30
Accidents (falls or shock)	9
Malpresentation	27
Large Child	2
Venereal Disease	3
Ante-partum Hæmorrhage	4
Delayed Labour	5
Deformed Pelvis	2
Twin Birth	3
Premature Birth	7
Unknown	58
	<hr/> 150 <hr/>

The attendances at the cases were:—

Doctors	40
Midwives	45
Doctors and Midwives.....	28
Maternity Home	10
Municipal Hospital	24
Royal Infirmary	3
	<hr/> 150 <hr/>

Maternity and Child Welfare Centres.—Dr. Taylor reports as follows:—

“ The 15 infant welfare centres continue to be well attended, indeed the majority show an increased number of attendances compared with the previous year. The numbers were so great at two of the centres that it was found necessary to hold weekly instead of fortnightly sessions.

In addition to the usual routine activities of the Maternity and Child Welfare Department, which have been fully maintained throughout the year, there are one or two new features on which to report.

As intimated in the Annual Report of 1932, the welfare of the toddler in Sunderland is under special consideration. Prior to March, 1933, there was no provision for the observation and treatment of cases of malnutrition and marasmus or wasting, apart from the facilities offered by the already over-taxed children's wards of the hospitals, where naturally the more

urgent and acute cases have the first claim. Therefore, in March, it was decided to admit a few of the most necessitous cases met with at the welfare centres to the Mowbray Maternity Home and, thanks to the kindness of the Ladies' Committee and to the co-operation of the Matron, seven cots were allocated to the care and treatment of the grosser cases of malnutrition, anæmia and rickets. An analysis of these cases and the results obtained is given below.

They were all children in which the condition had been of long-standing duration, and therefore results were slow, necessitating a period of three or more months in the Home before the desired effects were obtained. In the Summer months, when the children were able to be in the garden all day, and sleeping in the shelter at night, improvement was quicker, but in the winter, when such intensive open-air treatment was not possible, similar, though slower, results were obtained by courses of artificial sunlight which were given at the Health Office.

Altogether 27 children were admitted in the nine months ending December, 1933, and on the whole the results were entirely satisfactory, and more than justified the expenditure and work entailed, as well as demonstrating the need for such facilities in Sunderland.

Condition.	Under 1 Year.	Over 1 Year.	Cured.	Results.		Died.	Total.
				Improved.	Transferred to Hospital.		
Malnutrition and Marasmus.	11	16	13	7	3	4	27

Deaths.—Of the four deaths—they all occurred in children under one year—2 were due to prematurity and marasmus, 1 to pneumonia, and 1 marasmus.

It might be interesting to record an observation on the attitude of the mother which was noticed when dealing with the above cases. In the worst cases of malnutrition where, in spite of clinic treatment, little or no improvement had been made—the mother had become discouraged and hopeless about the

child, no doubt realising she was fighting a losing battle. It was found that when such a case had been in the Home, and eventually restored to the mother as a healthy normal child, she was stimulated and encouraged sufficiently to make the necessary effort to keep the child in the state in which it was discharged, and in most cases was willing to carry out instructions in an endeavour to maintain the child's improved condition.

It is hoped it will be possible to continue or even further develop this important and extremely necessary adjunct to child welfare work in Sunderland.

Another branch of the work which is being developed is that of the breast-feeding clinic at Lambton Street. Its aim is the promotion of natural feeding and the re-establishment of lactation when it is found to be failing. Selected cases where this treatment is indicated are drawn from the various centres in the town and test feeds are carried out. The mother is encouraged and instructed how to continue natural feeding. In the majority of cases the advice given has proved effective and resulted in natural feeding being adopted and maintained. I do not think that the importance of the work of this clinic can be over-estimated."

Ante-Natal Clinics.—There were 2,202 primary visits and 5,835 subsequent visits at the seven ante-natal clinics in the Borough, all cases being seen and examined by the doctor in attendance at the primary visit and at suitable intervals afterwards.

INFANTILE MORTALITY DURING THE TEN YEARS 1924—1933 AT

DIFFERENT PERIODS OF THE FIRST YEAR OF LIFE.

YEAR.	Births in Year.	Under one week		Under one month.		One and under three months.		Three and under six months		Six and under nine months.		Nine and under twelve months		Under one year.	
		Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.
1924	...	4285	92	21.4	34.5	76	17.7	81	18.9	57	13.3	71	16.5	433	101
1925	...	4106	101	24.5	37.8	90	22.0	70	17.1	89	21.7	79	19.2	483	118
1926	...	3830	107	27.9	44.4	52	13.6	55	14.4	45	11.7	65	16.9	387	101
1927	...	3646	111	30.4	41.4	59	16.2	39	10.7	46	12.6	47	12.9	342	94
1928	...	4198	122	29.1	41.0	60	14.3	48	11.3	48	11.3	39	9.1	367	87
1929	...	4111	92	22.4	33.1	70	17.0	79	19.2	78	19.0	85	20.7	448	109
1930	...	4242	96	22.6	33.9	57	13.4	54	12.7	40	9.4	35	8.3	330	78
1931	...	4087	94	23.0	36.2	74	18.3	77	18.8	53	12.9	53	12.9	405	99
1932	...	3982	97	24.6	40.7	67	16.8	59	14.8	45	11.3	47	12.3	380	95
1933	..	3703	95	25.6	39.1	37	10.0	62	16.7	50	13.5	37	10.0	331	89

BIRTHS, AND DEATHS UNDER ONE YEAR, WITH RATES. — YEAR 1933.

WARD.	Total Births (nett).	Birth-rate per 1000 population.	No. of Legitimate Births.	No. of Illegitimate Births.	Total Deaths under One Year (Nett).	Death-rate per 1000 births.	No. of Legitimate Deaths under One Year.	Legitimate Death-rate per 1000 legitimate Births.	No. of illegitimate Deaths under One Year.
Bishopwearmouth.....	193	19·3	180	13	16	83	15	83	1
Bridge.....	266	26·8	257	9	20	75	20	78	...
Central.....	204	30·2	190	14	27	132	25	131	2
Colliery.....	177	18·5	173	4	16	90	16	92	...
Deptford.....	187	17·9	178	9	22	117	20	112	2
East.....	243	31·6	238	5	32	132	31	130	1
Fulwell.....	77	13·3	75	2	3	39	3	40	...
Hendon.....	224	25·0	216	8	13	58	13	60	...
Monkwearmouth.....	183	27·0	176	7	19	104	18	102	1
Monkwearmouth-Shore..	223	24·9	218	5	19	85	18	82	1
Pallion.....	306	23·2	301	5	18	59	18	60	...
Park.....	213	23·4	203	10	24	113	23	113	1
Roker.....	151	13·7	145	6	8	53	7	48	1
St. Michael's.....	174	16·2	168	6	11	63	10	57	1
Southwick.....	354	24·1	341	13	33	93	31	91	2
Sunderland.....	247	31·8	235	12	26	105	25	106	1
Thornhill.....	143	9·5	141	2	12	84	12	85	...
West.....	138	14·8	132	6	12	87	9	68	3
BOROUGH.....	3,703	19·8	3,567	136	331	89	314	88	17

DEATHS FROM STATED CAUSES UNDER ONE YEAR OF AGE

CAUSES OF DEATH.	Year 1933.	Year 1932.	Increase or Decrease.	Percentage of total deaths under one.
Smallpox.....	...	...	...	...
Chickenpox.....	...	...	...	...
Measles.....	4	1	+ 3	1·2
Scarlet Fever.....	2	...	+ 2	0·6
Whooping Cough.....	1	18	- 17	0·3
Diphtheria.....	...	1	- 1	...
Influenza.....	11	4	+ 7	3·3
Erysipelas.....	...	...	...	...
Tuberculous Diseases....	2	5	- 3	0·6
Meningitis.....	6	2	+ 4	1·8
Convulsions.....	3	7	- 4	0·9
Bronchitis.....	20	52	- 32	6·0
Pneumonia (all forms)..	48	57	- 9	14·5
Diarrhœa & Enteritis..	62	45	+ 17	18·7
Gastritis.....	2	2	...	0·6
Syphilis.....	7	7	...	2·2
Rickets.....	...	...	...	...
Suffocation, including Overlying.....	2	4	- 2	0·6
Injury at Birth.....	1	1	...	0·3
Atelectasis.....	11	10	+ 1	3·3
Congenital Malform- ations.....	15	22	- 7	4·5
Premature Birth.....	84	78	+ 6	25·4
Atrophy, Debility and Marasmus.....	24	47	- 23	7·2
Other Causes.....	26	17	+ 9	7·9
TOTALS.....	331	380	- 49	100·0

The Barber Shield.—The Barber Shield has again been won by the Lambton Street No. 1 Centre, which provided the greatest attendance of mothers at the Lambton St. and Hylton Rd. Ante-natal Centres, viz., 308.

Centres.	Attendances.	
	1933.	1932.
St. Mary Magdalene's	175	325
Pilgrim Street	204	175
Dock Street	162	87
St. Barnabas'	220	198
Pottery Buildings	236	240
Dundas Street	233	384
Tyne Street	216	243
Railway Row	183	167
St. Mark's	73	111
Lambton Street (No. 1)	308	396
Lambton Street (No. 2)	204	378
Ravensworth Street	175	376
Southwick	250	317
Fulwell	179	72
Grangetown	168	87
Totals.....	2986	3556

From the above table it would appear at first sight there has been a falling off in the attendances at ante-natal treatment centres. This is not correct because in addition to the 2,986 visits paid to the Lambton Street and Hylton Road Centres, 2,849 attendances have been made at the Municipal Hospital and Maternity Home. There is every indication that the demands on the existing ante-natal centres are being increased.

Dental Treatment.—Dental treatment for nursing and expectant mothers was continued during the year, and the School Dental Officer reports as follows:—

Mothers.

733 mothers made 1,582 attendances.

5,842 teeth were extracted and 397 patients received scaling and gum treatment.

Pre-School Children.

378 pre-school children made 403 attendances.

656 teeth were extracted and 63 cases were treated with silver nitrate.

Pre-School Children.—During the year, by arrangement with the Education Department, minor ailments in children under the age of five years attending the infant welfare centres were referred to the school medical clinic.

191 children made 712 attendances at the Minor Ailments Clinics, compared with 292 children and 903 attendances for the previous year; 378 children received treatment at the Dental Clinic, compared with 250 for the previous year; 167 children were examined suffering from defective vision and 53 children were prescribed with glasses compared with 121 and 34 respectively for 1932.

Orthopædic Scheme.—During the year children under the age of five years suffering from some physical defect were referred to the Orthopædic Surgeon of the Royal Infirmary for treatment:—

No. of new patients ...	...	...	...	36
No. of old patients ...	...	...	...	22
Consultations in connection with above ...				238
Fitted with remedial appliances . . .				26
Advised and treatment arranged . . .				32



Blind Persons Act.—This Act is administered for the Council by the Education Department. For persons who are not Blind within the meaning of the Act, Section 66 of the Public Health Act, 1925, gives power to a local authority to assist in the prevention of blindness. The Health Committee have put into operation a scheme by which blind persons not sufficiently blind to come within the scope of the Blind Persons Act are submitted to the Eye Infirmary for examination and the provision of glasses where necessary—69 pairs of glasses were provided during the year.

Maternal Mortality.—There were 22 maternal deaths during the year 1933 compared with 20 in the previous year. An analysis of these deaths shows the following:—

(1) Puerperal Sepsis	12
(2) Intercurrent Diseases	7
(3) Toxæmia of Pregnancy	0
(4) Hæmorrhage	3

These 20 maternal deaths constitute a maternal death-rate of 5.94 compared with 5.02 in 1932.

This slight increase is regrettable when it is realised that much administrative concentration has been devoted to this branch of the Maternity and Child Welfare Services. 55 per cent. of the maternal deaths have been due to sepsis compared with 60 per cent. in the preceding year.

Of the 12 deaths which occurred in the Borough from septicæmia, all died in hospital and two of these were suffering from toxæmia due to albuminuria.

Maternal mortality shows no signs of decreasing and we do not appear to be any nearer the solution of this problem.

From an analysis of the 22 maternal deaths for 1933, the following conclusions can be drawn:—

1. The Institutions have carried out efficient treatment in all cases and there has been no infection at the institutions.

2. Admissions to these Institutions have in the majority of cases been too late for successful treatment ; in fact, the majority of the cases are admitted in extremis.
3. In all cases doctors have not been present at birth with midwives. This obviously is the ideal in midwifery at which to aim.
4. In the majority of cases ante-natal treatment has been refused by the mothers. This lack of co-operation between mothers, midwives and doctors is a serious handicap in the completion of any scheme for the prevention of maternal deaths.

At the Maternity Home, in order to eliminate all possibility of the spread of infection, nasal and throat swabs of all the staff engaged at a confinement have been taken and examined bacteriologically for the presence of streptococci hemolyticus. All swabs up to the present have been negative, each new member of the staff being examined before taking up duty. Moreover, masks are worn by all attendants at labour.

MATERNAL MORTALITY.

Year.	No. of Deaths.	Death-rate per 1,000 Births from:		
		Sepsis.	Other Causes.	Total Childbirth.
1923	16	0.99	2.97	3.96
1924	20	0.70	3.97	4.67
1925	17	1.70	2.43	4.13
1926	16	1.82	2.35	4.17
1927	17	1.09	3.57	4.66
1928	17	1.66	2.38	4.04
1929	25	2.68	1.95	4.63
1930	16	1.18	2.59	3.77
1931	19	1.96	2.69	4.65
1932	20	3.01	2.01	5.02
1933	22	3.24	2.70	5.94

Nursing Homes Registration Act, 1927.—There were no additional registrations during the year; there are 4 Homes on the register and these have been examined periodically.

Grants to Necessitous Mothers and Children.—There were 18,182 cases eligible for help, the standard being the “dole” or its equivalent. The total expenditure for the year was £1,580 5s 0d. (compared with £1,694 0s. 2d. for the previous year), the average weekly number of grants being 350 and the cost £30 7s. 9d. per week.

Fresh milk, butter and biscuits were supplied to 89 mothers attending the ante-natal clinic, the mothers partaking of these on the premises. In all cases a marked improvement and decided benefit has been noticeable.

In making grants to necessitous cases a difficulty has arisen in carrying out the regulations as to eligibility where grants are given only on medical grounds and not purely on a basis of income. A woman in receipt of P.A.C. relief has a child which is healthy. There is no need for any grant to be made in this case. From experience it has been found, however, that unless this woman receives additional grants in the way of milk, or milk foods, that child will not remain healthy. A Public Health Committee is concerned with preventive medicine and the question arises as to whether an additional grant should be given by the Health Committee on the grounds of preventive medicine, or whether an additional grant should be given by the P.A.C. to maintain health. This question is dealt with, in detail, later on in the Report.

Visits by Health Visitors.—There are 15 health visitors on the staff of the Health Department, 13 of these each being responsible for a district in the Borough and each being in charge of a welfare centre. During the year the health visitors paid 49,669 visits, in addition to their attendances at the welfare centres, compared with 36,110 for the previous year.

Supervision of Midwives.—There were 42 midwives on the register on December 31st, 1933. 2,458 (or 66 per cent.) of the total number of births registered were attended by midwives; this number includes 206 cases at the Maternity Home and 348 cases attended by the District Nursing Association.

There were 91 visits paid to midwives for the inspection of kit, and all cases of puerperal fever, ophthalmia neonatorum and pemphigus neonatorum were investigated. There were 10 warnings given with respect to unsatisfactory charts, registers and bags and twelve midwives were interviewed at the Health Office.

The Sunderland Midwives' Association.—The Association comprises 26 members, a president, vice-president, treasurer and secretary.

The meetings, which are held in the Health Office on the first Thursday in every month, continue to be well attended.

A series of lectures on appropriate subjects concerning midwifery was arranged and appreciated by the members. These lectures were given by the four doctors in attendance at the Maternity Home.

Infant Life Protection.—At the beginning of the year there were 14 children under supervision. One of these was returned to its mother, one was legally adopted, and one reached the age of nine years, leaving 11 under supervision at the end of the year. Miss Raine paid 130 visits to these cases during the year.

Infectious Diseases relating to Mothers and Infants.—The following table shows the number of cases of puerperal fever, puerperal pyrexia, ophthalmia neonatorum and pemphigus neonatorum during the year, compared with the previous year:—

			Puerperal Pyrexia.	Ophthalmia Neonatorum	Pemphigus Neonatorum	Puerperal Fever.
1932	...	...	30	27	3	15
1933	...	...	28	19	6	15

Pemphigus Neonatorum.—There were 6 cases of pemphigus as compared with 3 in the previous year, and the midwives involved were thoroughly disinfected in order to prevent the spread of the infection among other infants they were attending.

Ophthalmia Neonatorum.—19 cases were notified during the year; of these 10 were notified from the Institutions and 9 by private practitioners.

CASES.			Vision Un- impaired.	Vision Impaired.	Total Blindness.	Deaths	Removed out of County-- no trace
Notified.	Treated.						
	At Home.	In Hospital					
19	15	4	18	..	...	1	...

The free issue to midwives of small bottles containing collosol argenti, for the treatment of the eyes of the new-born child has been continued during the year.

Puerperal Fever.—Puerperal fever still claims its toll of maternal deaths, 12 having occurred during the year compared with the same number for the previous year.

Puerperal Pyrexia.—28 cases were recorded as against 30 in 1932, 12 being doctors' and 18 midwives' cases.

Health and Baby Week.—In October a combined Health and Baby Week was held in conjunction with the Sunderland Infant Welfare Association. The week began with a Mass Meeting in the Victoria Hall, attended by the Mayor and Mayoress, when an address was given by Mr. Angus Watson, of Newcastle. At the Infant Welfare Centres during the week individual activities took place, most of them dealing with competitions for the making of garments and other useful articles for the home. In addition, most centres provided attractive plays or cinemotor performances. Two special films were shown in the Co-operative Hall, Green Street, in connection with the British Social Hygiene Council, viz.: "How to Tell" and "Deferred Payment," which dealt with social diseases. There was also an afternoon display of health films at the Roker Theatre.

Astor Challenge Shield.—The Health Committee and the Sunderland Infant Welfare Association, for the Health and Baby Week held during the year, were awarded Second Prize, the Kettering Shield. This competition is held by the National Baby Week Council, upon which Sunderland was represented during the year by Mrs. Frank Dawson, Miss H. Wood, Secretary of the Sunderland Infant Welfare Association, and your Medical Officer of Health.

Better Health.—During the year 60,000 copies were again circulated of this magazine, which continues to provide excellent reading for mothers and fathers.

The Guild of Help.—This Association has continued to provide very valuable help for those cases for which statutory assistance is not made, and close co-operation between its Secretary and this Department takes place.

Grindon Convalescent Home.—In 1933, 155 mothers and 230 children were admitted to the Home. This Home continues to do most admirable and valuable work in restoring to health poor and necessitous mothers and babies recruited from the various welfare clinics.

Sunderland Infant Welfare Association.—This Association has continued its excellent work at the Centres which owe so much to voluntary helpers.

District Nursing Association.—This Institution has again carried out valuable work in co-ordination with the Infant Welfare Department.

Ultra Violet Radiation.—There has again been a sustained improvement in conditions treated by Ultra Violet Radiation, the lamps used being 2 Jesionek Mercury Vapour Lamps. This form of treatment has been a very valuable aid to work done at the tuberculosis dispensary and at the welfare centres, and the beneficial results obtained have fully justified the expenditure.

THE FOLLOWING WOMEN AND CHILDREN, UNDER 5 YEARS OF AGE, ATTENDED DURING THE YEAR:—

NUMBER OF PATIENTS ATTENDED FOR:—

Rickets	333	} = 748
Marasmus	22	
Skin	6	
Enlarged Gland	24	
Underweight	42	
General Debility	221	
Chest	24	
Anæmia	60	
Muscular Flabbiness	16	

RESULT OF TREATMENT:—

Discharged cured	249	} = 748
„ improved	468	
Still attending	31	



VISITS MADE BY HEALTH VISITORS.

District.	Total Visits.	First Visits.	Breast-Red Ist Visits.	Re-Visits		Measles under Five Years.	Whooping Cough.	Diarrhoea	Dental Clinic		Ophth. Clinic		Ante-natal.		Ophth. Neon.		T.B. Primary.	Pneumonia	Other Visits.	Notified Births	Deaths under One Year.
				0 to 1 Year.	1 to 5 Years.				Child'n under 5 Yrs.	Moth-ers.	Child'n under 5 Yrs.	Adults.	First Visits.	Subse-quent.	First Visits.	Subse-quent.					
No. 1	4704	235	231	928	2932	103	...	15	73	70	39	8	35	130	...	...	1	52	83	244	37
" 2	3907	230	224	785	2360	121	...	4	37	69	11	4	119	47	...	...	...	39	81	242	24
" 3	4162	245	240	768	2535	160	...	14	3	74	10	...	155	74	1	...	...	36	87	238	26
" 4	3372	189	188	572	2339	57	...	3	8	42	7	...	65	20	...	...	3	30	37	203	9
" 5	3362	252	252	902	1726	154	...	8	19	64	14	1	93	29	2	8	6	27	57	299	27
" 5a	1217	65	58	261	778	14	...	...	8	18	...	...	22	2	3	...	1	4	42	79	6
" 6	3262	333	327	494	1985	161	...	9	42	65	11	5	55	3	2	4	3	28	62	363	22
" 7	3684	276	269	718	2227	124	...	8	53	64	6	1	84	14	3	6	5	39	56	266	25
" 8	3886	303	298	765	2399	154	...	5	17	55	4	1	54	24	1	1	3	37	63	307	25
" 9	3720	254	252	720	2504	53	...	3	33	29	7	2	35	8	3	11	5	15	38	242	18
" 10	3375	242	232	697	2244	48	4	3	17	22	6	1	30	4	...	3	3	17	34	247	16
" 11	3684	353	353	683	2121	108	...	13	46	83	24	2	102	26	2	12	3	34	72	347	35
" 12	3579	288	281	663	2198	130	...	8	18	50	9	...	54	61	1	...	8	41	50	300	26
" 13	3755	288	288	779	2308	89	...	10	28	80	5	5	80	29	1	3	2	12	35	296	35
Whole Borough	49669	3553	3493	9735	30656	1476	4	103	402	785	153	30	983	471	19	48	43	411	797	3673	331

MATERNITY AND CHILD WELFARE CENTRES.

Centre.	No. on Books, Jan 1st, 1933.	No. on Books, Dec. 31, 1933.	Attendances.				No. admitted during year.	Weekly Average Attendance.	Doctors' Consultations.		No. of Sessions attended by Doctors.
			0 to 1.	1 to 2	2 to 3.	3 to 5.			First Time.	Subsequently.	
Pilgrim St.	217	283	1496	623	524	605	163	63.7	128	228	42
Pottery Buildings ..	358	467	2404	1053	769	841	290	102	277	1239	36
Tyne Street	242	348	1615	779	517	804	220	75.6	202	271	42
Railway Row	184	308	1757	648	430	535	208	66.6	188	998	44
Lambton Street (1)	365	496	2487	844	541	792	323	98	314	1247	47
Ravensworth St....	356	401	2177	724	487	626	270	83.7	238	1065	41
Lambton Street (2)	204	332	1377	640	447	612	217	61	181	526	22
St. Mark's	259	355	1962	675	450	596	206	78.9	134	237	19
Dundas Street	275	391	2104	815	597	683	231	85.7	218	941	36
Pallion	358	515	2300	1022	688	930	334	106.1	277	510	36
Dock Street	255	336	2410	1325	651	976	204	114	205	1072	40
St. Barnabas	393	450	2324	1259	697	996	247	101.5	242	949	43
Southwick	326	485	2978	565	359	527	304	94.5	267	901	48
Grangetown	246	317	1714	698	494	589	212	76	174	584	20
Fulwell	173	230	1797	693	353	348	149	60.4	147	897	46
Total	4211	5714	30902	12368	8004	10460	3578	1267.7	3192	11665	562

	Delayed Labour.	Mal Presentation.	Inflamed Eyes.	Feebleness of Child	Weakness of Mother	Premature Birth.	Still Births.	Lacerated Perineum.	Hæmorrhage.	Adherent Placenta.	Abortion.	Puerperal Sepsis.	Miscarriage.	Rise of temperature.	Placenta Prævia.	Eclampsia.	Artificial Feeding.	Cæsarian Section.	Anæsthetic.	Death of Baby.	Death of Mother.	Ante natal.	Source of Infection.	Ante natal Examinations.	Sent into Mkt'h Hospital	Sent into Royal Infirmary.	Sent into Municipal Hospital.	Sent into Maternity Home.	Induction of Labour.	Contracted Pelvis.	Sent to Sanatorium.	TOTAL.	Number of Cases.		
Mrs. Angus	7	...	1	8	13	...	11	1	2	1	1	...	1	4	...	...	1	1	...	6	...	1	...	...	...	...	3	...	...	...	...	...	62	152
" Atkinson...	4	...	...	5	5	...	...	1	3	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	24	37
" Berry .....	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1
" Brown .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	13
Miss Butler	3	1	1	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	25
Mrs. Blakelock ..	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	13
" Cook, P.	5	11	1	2	2	...	5	5	2	6	6	...	...	...	...	...	...	...	...	5	3	...	...	...	...	...	...	6	...	...	...	...	59	137
" Chambers ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
" Cromarty...	14	3	...	2	14	1	6	16	2	2	2	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	3	...	...	...	69	146
" Cook, J. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41
" Dunlop .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" Fisher	11	2	1	2	4	...	2	3	3	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	69
" Gray	2	...	2	1	4	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	57
" Houston ..	5	2	1	6	9	...	2	5	3	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	146
" Kent	5	3	2	4	2	...	2	8	1	...	1	...	2	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	73
" Lillie	3	...	1	3	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	68
" Minto	8	...	6	8	10	...	9	8	5	...	...	...	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	170
" Mellor	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
" Mason	1
" Oliver
" Rackstraw ...	3	1	...	3	6	1	5	1	1	162
" Stewart ..	1	3	3	...	1	2	1	...	1	29
Miss Steir	3	...	1	2	1	...	...	4	1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	35
Mrs. Slack	1
" Turner	14	...	1	4	7	...	3	29	3	...	...	...	...	7	2	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	197
" Watson	18	7	2	6	22	...	1	7	3	3	...	...	...	2	3	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	237
" Waters	5	...	3	...	6	...	...	8	3	...	...	...	7	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	77
" Wilkes
Miss Gill, Victoria House	12	1	4	12	11	2	4	32	3	6	6	1	348
Miss Gibson, Maternity Home	9	4	...	10	13	10	13	17	12	2	4	2	10	206
Totals	134	36	27	82	134	19	78	157	48	16	18	...	15	21	6	...	...	9	5	27	64	14	22	15	13	1	...	35	16	5	6	4	1027	2458

NUTRITION.

During the year the subject of Nutrition was given great prominence arising out of suggested minimum weekly allowances necessary for the maintenance of health.

In order to satisfy ourselves that the people, especially the children, in an industrially crippled area were being maintained on a suitable standard, particulars were taken of 36 consecutive applications for assistance in the way of milk, milk foods, etc., either at the Welfare Centres or at the Health Office.

An analysis of these particulars showed that not only were families existing on a weekly allowance much below a suitable scale of maintenance but that there were several items of expenditure out of the total weekly income which prevented a sufficient amount being allocated for the purchase of essential foodstuffs. Moreover, the foodstuffs which were purchased were not calculated to be of the type for the successful feeding of babies and young children.

The type of foodstuffs purchased is equally as important as the amount in connection with the feeding of children; for a malnourished child can result from over and not under feeding if the dietary is not based upon a certain amount of knowledge.

There is at the present time a great need for more propaganda work to be carried out upon the infusion of knowledge

of food values among mothers bringing up children to be healthy with a restricted allowance for foodstuffs.

During each of our Health and Baby Weeks, held yearly since 1927, a Section has been devoted to domestic economy and the practical preparation of meals for families of various sizes. This section has been the one which year after year has been overcrowded and has had to be repeated—showing the desire of the mothers themselves to learn.

Recorded on pages 122 and 123 are the particulars of the 36 applicants for assistance in food, giving the size of the family with ages of children, the total income, and the manner in which that sum is expended.

Sums are apportioned for rent, coal, gas, clothing, insurance and other duties; the remainder is recorded as available for food, given in some instances in detail. The sum available for food is divided by the total in the family, children under 12 years of age being counted as half, to show the cost per head per week.

Case No.	No. in Family (with ages)	Rooms, No. of	Total Income (and source).	EXPENDITURE.							Total.	DETAILS OF FOOD.	Cost per head per week for Food.	REMARKS.
				Rent.	Coal.	Gas.	Clothing, &c., Clubs.	Insurance.	Other Payments (not Food).	Food.				
1	(9) Father, Mother, Children, 13, 12, 10, 7, 4, 2, and 9 months.	2	£1 17s. 3d. Unemployment. 3s. 6d. P.A.C. £2 6s. 3d.	7/3	2/-	1/-	4/-	2/-		18s. 8d.	£1 15s. 11d.	s. d. Dried Milk (2 pkts.) 2 4 Flour (3 st.) 4 6 Tea (1 lb.) 0 10 Butter (Cupine (1½ lb.) 1 0 Green Groceries 2 6 Meat 3 0 Bacon 1 0 Milk 1 0 General Groceries 1 6 18 8	2s. 10d.	1/- for 2 tins of condensed milk for four children under 10 years consumes unfavourably with 4s. a week pocket money for the father.
2	(3) Husband, Wife, and 1 Child, aged 7 months.	3	£1 5s. 3d. Unemployment Insurance.	13/0	2/-		1/3	1/7		7s. 5d. Including 8d. milk for baby.	£1 5s. 3d.	s. d. Milk (for baby)..... 0 8 Groceries..... 6 9 Meat is supplied at week-end by wife's mother.	3s. 6d.	1½/- a week rent from an income of 25/3 is obviously too much, leaving 8d. per week for milk for a baby of 7 months.
3	(6) Husband, Wife, Children aged 4½, 2½, 1½, 6 months	2	£1 11s. 3d. Unemployment Insurance.	10/-	2/6	1/6	2/-	1/-	1/- (husband).	13s. 3d. Including milk food for baby value 3/4.	£1 11s. 3d.	s. d. Milk (Ambrosia) 3 4 Food 9 11	3s. 4d.	A rent of 10/- out of an income of 31/3 allows too little money to spend upon essential foodstuffs for 4 growing children.
4	(7) Father, Mother, Children, 1½, 11, 4, 3, and 5 Months.	3	£1 9s. 5d. P.A.C. 7s. 6d. Son, 17 years, 9s. 6d. Son at sea. £2 3s. 3d.	11/- (water in- cluded)	3/-	2/6	3/6	2/11		22s. 4d. Including 5/6 for milk and baby's food (milk 1/8 food 3/10)	£2 5s. 3d.	s. d. Milk 1 8 Milk Food (baby) 3 10 Food (Groceries, &c.) 16 10	4s. 6d.	Rent and Insurance leave too little money to bring up four young children.
5	(4) Father, Mother, Children, 7 and 4 years.	2	£1 7s. 3d.	8s. (water in- cluded)	2/-	1/6	2/-	1/6	1/-	10s. Including 1/- for milk.	£1 6s. 3d.	s. d. Milk 1 0 Butcher 3 6 Grocer 4 0 Greengrocer 1 6	3s. 4d.	No comments.
6	(5) Father, Mother, Children, 11, 4, and 5 months.	2	£1 9s. 3d. Unemployment Insurance.	8/9½ (water in- cluded)	2/6	1/-	2/-		6	14s. 4½d. Including 3/4 for milk for baby.	£1 9s. 2d.	s. d. Ostermilk (baby)..... 3 4 Butcher 2 0 Grocer 7 7½ Greengrocer 1 5	4s. 1d.	No comments.
7	(7) Father, Mother, Children, 11, 7, 3, and twins 6 months.	3	£1 13s. 3d. P.A.C.	11/4	2/6	1/-	2/-	2/3	1/7 Personal Expenses.	12s. 7d. Including 9d. Milk.	£1 13s. 3d.	s. d. Flour (1½ stone) 1 10½ Wheatmeal (1 stone) 0 4½ Yeast..... 0 2 Salt..... 0 1 Baking Powder..... 0 1 Eggs (3) 0 2 Lard (½ lb.) 0 2 Jam (1 lb.) 0 4½ Butter (2 lb.) 1 6 Bacon (1½ lb.)..... 1 1½ Rice (1 lb.) 0 2 Soap (2 lb.) 0 9 Soda..... 0 1 Sugar (3 lb.) 0 6 Condensed Milk (2 tins) .. 0 9 Tea (½ lb.) 0 8 Meat..... 2 0 Milk 0 9 Potatoes..... 0 8 Apples..... 0 3 Onions..... 0 1 12 7	2s. 10d.	A rental of 11/4 and Insurance of 2/3 is too big a proportion out of a wage of 33/3, and allows only 9d. for tinned milk for twins aged 6 months and a child of 3 years.
8	(8) Father, Mother, Children, 12, 10, 8, 6, 4, 1.	3	£1 15s. 3d. P.A.C.	11/3	2/-	8d.	2/8	1/5	6d.	15s. 9½d.	£1 15s. 1½d.	s. d. Butcher 3 1 Potatoes, etc. 1 6 Flour (2½ st.) and yeast .. 4 0 Butter (1 lb.) 0 11½ Margarine (1 lb.) 0 11½ Tea (1 lb.) 1 4 Milk (2 tins) 0 6 Cocoa (2 oz. tin) 0 3 Jam (2 lb.) 0 6½ Eggs 0 6 Sugar (1 lb.) 0 9 Bacon (½ lb.) 0 5 Rice (1 lb.) 0 2 Lard (½ lb.) 6 2 Currants (½ lb.) 0 2½ Salt 0 2 Soap (1 lb.) 0 3 Soap Powder 0 6 Candles and Matches 0 2 15 9½ Vegetables obtained from own garden.	2s. 10d.	A rental of 11/3 from a wage of 35/2 leaves only 6d. for 2 tins of condensed milk for six children.
9	(4) Father, Mother, Children, 8 years, 6 months.	3	£1 7s. 3d. P.A.C.	11/3	2/-	2/-	1/-	1/-	6d. Electric Light	9s. 6d. Including 2/4 for Ostermilk for baby.	£1 7s. 3d.		3s. 2d.	A rental of 11/3 from a wage of 27/3 leaves too little allowance for food. Also 2/4 a week from the sum of 9/6 available for food is too big a proportion to have to pay for a proprietary food for the baby of 6 months.
10	(4) Father, Mother, Children, 1½ years, 4½ months.	2 Council House	£1 7s. 3d.	7/1	2/6	1/-	2/-	1/-	1/6 Electric Light.	12s. 2d. Including Cod Liver Oil 1½d., Food for baby 3/4, and milk for elder child 1/0½.	£1 7s. 3d.		4s. 1d.	No comments.
11	(6) Father, Mother, Children, 10, 8, 2, 1.	2	£1 11s. 3d.	7/-	2/6	1/4	2/3	2/-	2/- Furniture, 6d. Cleaning Materials.	13s. 3d. Including 1/6 milk.	£1 11s. 3d.	s. d. Milk 1 0 Meat 3 0 Groceries 8 9 13 3	3s. 4d.	No comments.
12	(5) Father, Mother, Children, 7½, 3½, and 10 months.	2	£1 9s. 3d.	7/-	3/-	1/9	2/-	2/-	6d. Doctor, 8d. Cleaning Materials.	12s. 4d.	£1 9s. 3d.	s. d. Milk 0 8½ Meat 4 0 Groceries 7 7½ 12 4	3s. 6d.	No comments.
13	(2) Husband, Wife.	1	£1 5s. 3d. P.A.C.	6/-	1/6	1/6	4/-	1/-	4/9 Furniture, 2/- Husband's Cigarettes.	2s. 6d.	£1 3s. 3d.		1s. 3d.	The expenditure on clothing, on hire-purchase of furniture, and 2/- for cigarettes out of an allowance of 23/3 leaves 2d. for two people for food for a week. The practice of young couples buying furniture on the hire-purchase system forces them to economise on more necessary items.
14	(8) Father, Mother, Children, 11, 12, 7, 4½, 2½, and 7 months.	1	£1 15s. 3d. Unemployment.	5/7		2/-	4/6	1/8	1/- Shoe Repairs. 2/6 Furniture. 1d. Matches. 1½ Cleaning Materials. 5d. Extras.	16s. 4d.	£1 15s. 3d.	s. d. Meat 1 6 Fruit 0 6 Butter and Margarine 1 5 Sugar 0 9 Bread 5 6 Potatoes, &c. 1 5 Baking Powder 0 1 Dried fruit 0 2½ Cocoa 0 5 Bacon 1 4 Tea 1 0 Lard 0 4 Condensed Milk 0 10½ Sausage 0 5 Eggs 0 2 Condiments 0 2 Rice 0 3 16 4	2s. 9d.	Six children, including three under 7 years cannot satisfactorily be brought up on 10d. worth of condensed milk.
15	(5) Father, Mother, Children, 5, 3, and 4 months.	2	£1 9s. 3d. Unemployment.	8/7 Including Light.	2/-		3/3	2/7	1/- Shoe Repairs. 6d. Doctor, 1/- Man's Pocket Money, 1½ Cleaning Materials, Papers, etc.	8s. 11d.	£1 9s. 3d.	s. d. Meat and Bacon 2 6 Tea 0 8 Butter 0 8½ Bread 2 0 Vegetables 1 0 Milk 1 0 Eggs 0 6 Sugar 0 4 Cheese 0 2 8 11	2s. 6d.	One shilling's worth of milk for three children.
16	(3) Father, Mother, Baby, 8 mths.	1	£1 5s. 3d. Unemployment.	6/-	1/9	2/4	7/-	9d.	2/6 Furniture, 2/- Perambulator.	6s. 11d.	£1 5s. 3d.	s. d. Grocer 6 4 Milk 0 7 6 11 Mother-in-Law supplies any meat and vegetables that they get.	2s. 9d.	No comments.
17	(6) Father, Mother, Children, 5, 3½, 2, and 11 months.	3 cottage	£1 11s. 3d.	11/-	2/6	1/6		1/6	6d. (Doctor).	14s. 3d.	£1 11s. 3d.	s. d. Grocer 8 3 Greengrocer 2 6 Butcher 3 0 Milk 6 6 14 3	3s. 7d.	A rental of 11/- allows 6d. for milk for four children of 5 years and under.
18	(5) Father, Mother, Children, 7, 4, 2 years.	2	£1 15s. 6d. Labourer.	5/6	2/6	1/6	4/-	2/-	4/6	15s. 9d.	£1 15s. 0d.	s. d. Food 8 4 Meat 10 0 5 0	4s. 3d.	No comments.

Case No.	No. in Family (with ages)	Rooms, No. of	Total Income (and source).	EXPENDITURE							Total.	DETAILS OF FOOD	Cost per head per week for Food.	REMARKS.
				Rent.	Coal.	Gas.	Clothing, &c., Clubs.	Insurance.	Other Payments (not Food).	Food.				
19	(6) Father, Mother, Children, 10, 7, 3½, 2.	2	£1 11s. 3d. P. A. C.	6/6	2/-	1/2	4/-	1/10	2/- Husband's pocket money, 6d. (spints), 4/3 Extras.	5/	£1 11s. 3d.	s. d. Food 7 0 Meat 2 0	2s. 3d.	No comments.
20	(6) Father, Mother, Children, 9, 7, 2, 7 mths.	2	£1 11s. 3d. P. A. C.	6/6	2/4	1/3	3/-	1/3	6d. Doctor's Club.	7/10	£1 3s. 1d.	s. d. Food 6 6 Meat 2 4	1/11½	Too little allowance for food and 8/2 unaccounted for in the budget.
21	(3) Father, Mother, Child, 1½ years.	2	£2 2s. 0d. Labourer.	5/-	2/6	1/9	2/-	1/-	9/- Travelling expenses. 2/6 Furniture.	11/-	£1 14s. 9d.	s. d. Food 7 6 Meat 3 6	4/5	9/- travelling expenses is excessive for deduction from a wage of £2 2s. 0d.
22	(7) Father, Mother, Children, 12½, 8½, 4½, 1½, 6 months.	2	£1 13s. 3d. Unemployment Benefit.	9/3	3/-	1/9	2/-	2/7	6d. Doctor's club 3/9 Extras.	10/5	£1 13s. 3d.	Butcher 1 6 Grocer 7 0 Greengrocer 0 6 Nestles 1 5 Milk for Baby	2/1	No comments.
23	(5) Father, Mother, Children, 7, 2, & 5 mth.	1	4s. 0d. (Hawker) £1 0s. 0d. (Parish)	4 3	1/6	2/-	3/-	1/6	2/3 Extras.	9/6	£1 4s. 0d.	Butcher 2 6 Grocer 6 0 Greengrocer 1 0	2/9	No comments.
24	(3) Father, Mother, Child, 10 mths.	1	£1 5s. 3d. Unemployment Benefit.	5/6	2/6	2/-	3/	1/3	2/- Furniture. 10d. Extras.	8/2	£1 5s. 3d.	Groceries & Vegetables.... 5 0 Milk for Baby 1 2 Meat 2 0 8 2	3/3	No comments.
25	(9) Father, Mother, Children, 15, 12, 10, 8, 6, 10 months & 10 mths (twins).	2	£2 5s. 0d. (Average) Coal Trimmer.	7/3	3/-	3/6	3/-	1/9	6d. Doctor's Club. 5/11 Clothing &c.	20/1	£2 5s. 0	Butcher 4 0 Grocer 11 0 Greengrocer 1 0 Milk (2 pints per day)..... 4 1 20 1	3/1	No comments.
26	(6) Father, Mother, 13, 8, 4, 2.	2	£1 11s. 3d. Unemployment Benefit.	5/6	2/6	1/9	5/3	2/11	6d. Church.	11/10	£1 11s. 3d.	Butcher 3 0 Grocer 8 3 Milk 7	2/7½	5/3 for clothing and 3/11 for insurance allow only 7d. for milk.
27	(7) Father, Mother, Children, 13, 9, 5, 3, 2.	2	£1 13s. 3d. Unemployment Benefit.	4/9	3/-	2/-	2/6	1/5	1/- Union. 2/6 Money Club.		£1 12s. 11d.	Groceries..... 8 0 Meat..... 5 0 Vegetables 2 9	3/2	No comments.
28	(7) Father, Mother, 7, 5, 3, 1, 1.	2	£1 14s. 0d. Parish.	6/-	2/9	1/9	2/-	2/-		12/6	£1 7s. 0d.	Groceries..... 5 0 Meat..... 3 0 Milk 2 0 Vegetables 2 6	2/9	No comments.
29	(5) Father, Mother, Children, 12, 10, 9, 7, 4.	2	£1 13s. 3d. P. A. C.	6/6	1/6	1/9		1/-	1/- Boot Repairs. 1/10 Cleaning Materials. 6d. Olive Oil. 4d. Lamp Oil. 2d. Matches.	18/3	£1 12s. 10d.	s. d. Meat 3 6 Bacon 1 3 Butter 0 7 Margarine 0 9 Lard 0 4½ Flour 3 4 Tea 2 6 Milk 1 0 Sugar 1 1½ Vegetables 2 0 Eggs 1 6 Corned Beef 0 4 18 3	3/8	No comments.
30	(5) Father, Mother, Children, 4½, 3, 11 mths.	1	£1 9s. 3d.	5/-	3/-	1/-	5/- (Furniture)	2/2	1/- Electric Light. sd. Sundries (Soap). 1/3 Husband's pocket money.	10/2	£1 9s. 3d.	s. d. Groceries..... 6 0 Meat 2 0 Eggs 1 0 Vegetables 1 2	2/11	No comments.
31	(4) Father, Mother, Children, 4½, 3, & 5 mths.	1	£1 9s. 2d.	5/4	Coal obtained by Father from bench	2/4	3/-	1/9	1/6 Cigarettes &c.	15/2½	£1 9s. 1½d.	s. d. Milk 3 0½ Eggs 1 2 Vegetables 1 9 Meat and Bacon 4 0 Groceries 5 3 15 2½	4/4	No comments.
32	(10) Father, Mother, Children, 16, 14, 12, 10, 9, 5, 3, and 10 months.	1	£1 15s. 3d. Unemployment Insurance. 14s. 6d. (Wages of two boys).	7/-	2/6	1/9	3/-	1/2		£1 4s. 10d.	£2 0s. 3d	Groceries..... 1 0 0 Greengrocer 0 2 6 Milk 0 2 4	3s. 4d.	No comments.
33	(7) Father, Mother, Children, 10, 8, 5, and 1 month twins.	3	£1 13s. 3d. Unemployment Insurance.	12/6	2/-	1/2	1/-	1/2		12s. 0d. (Vegetables from own garden).	£1 9s. 10d.	s. d. Groceries..... 10 0 Meat 2 0	2s. 8d.	12/6 rent for a Corporation House out of an income of £3 allows too little for food although vegetables are home produced; this factor shows the importance of allowances.
34	(5) Father, Mother, Children, 3½, 2½, and 3 months.	1	£1 9s. 3d. Unemployment Insurance.	7/-	3/-	2/-	3/-	1/6		12s. 8d.	£1 9s. 2d.	s. d. Ostermilk 1 8 Butcher 1 0 Grocer 10 0	3s. 7d.	No comments.
35	(5) Father, Mother, Children, 4, 3, and 7 weeks.	2	£1 12s. 6d. (short time) Miner.	7/-		2/-	3/6	2/-	1/- Society. 6d. Doctor's Club. 6d. Coal Loading.	16s. 0d.	£1 12s. 6d.	s. d. Milk 1 6 Butcher 3 6 Grocer 10 0 Greengrocer 1 0	4s. 7d.	No comments.
36	(9) Father, Mother, Children, 13, 11, 8, 6, 5, 2 and 7 mths.	3	£3 0s. 0d. (Painter, work'g in Liverpool.) Wife's allowance £1 10 0	8/3	2/-	1/6	1/6	1/3	£1 5 0 (Husband's board) 1/- Union.	14/1½	£1 9 0½	s. d. Grocer 11 0 Greengrocer 1 3 Butcher 1 0 Milk 0 10½	2/10	No comments..

Analysis Observations:

(1) The average cost per head for food is 3/2d. per week, which is too little for the maintenance of healthy life and accounts inter alia for the lack of resistance against illness and the prolongation of the period of convalescence which has been noted in children suffering from infectious diseases.

(2) The rent for houses for a family with a large number of children takes too much out of the weekly income and leaves too little for the very family which requires it for rearing these children. Life is said to be made up of two constituents—Environment and Food; and of these Food is of the greater importance. The provision of food is more important than the provision of houses; for it is safer to live in a poor house with a full stomach than in a palace with an empty one. An instance is recorded of a family with one child paying 13/- weekly for rent and 8d. for milk.

(3) Too large a proportion of the weekly income is paid in Insurance. As soon as a child is born money is paid to insure for burial whereas, if that money were available for feeding, the necessity for the funeral would be postponed. An instance is recorded of a family with four children (three of whom are not eight years of age) paying 3/11d. per week for insurance and 7d. for milk.

(4) Food Values. Of a necessity the cheapest food has to be bought irrespective of its food value for promoting growth in children. Margarine, white bread, and potatoes will never rear a healthy child nor produce a child of five fitted with resisting powers to enter the elementary school and benefit from education. The child overfed on carbohydrates and starch foods, but underfed on essential proteins and with no fresh element in its diet, cannot hope to compete with a child brought up on a properly balanced diet. Milk is an essential article of diet for the growth of children—but milk is almost a generic term. Fresh milk is a biological fluid conveying powers of

resistance to a growing child but there are no powers of resistance contained in two tins of condensed milk per week for sixpence for a family of eight with children whose ages are 12, 10, 8, 6, 4 and 1 year.

Without the assistance of milk grants given at the Infant Welfare Centres to amplify the weekly allowance, the outlook of the young child would not be as good as it is to-day.

(5) Instances are recorded of fresh vegetables being available because the father has an allotment. This is a feature of tremendous importance in the provision of foodstuffs containing fresh elements and is an example of fathercraft helping mothercraft in the dual responsibility of family duties.

HOUSING.

Policy.—The attitude of the Health Committee towards the housing of the people of the working classes has been to provide a semi-detached house, and houses in blocks of four, with a minimum of 3 bedrooms in order to separate the sexes in a family of growing children, and with sufficient height and floor space to give an adequate cubic capacity for ventilating purposes.

The economy restrictions placed upon local authorities by the Ministry of Health has made this praiseworthy and far-seeing attitude difficult of accomplishment in building a house where specifications have been made down to a low figure of construction.

Owing to our northern latitude the Health Committee considers it desirable that in order to obtain the maximum amount of light, air, and sunshine, no ground floor room should be less than 8 ft. 6 ins. in height.

Standard.—The following are types of houses being built at the present moment by the Corporation for the purpose of re-housing:—

TYPE A.

HOUSE WITH TWO BEDROOMS. 660 superficial feet.

Living Room	.....	13 ft. 7 in.	x	13 ft. 0 in.	x	8 ft. 6 in.
Scullery	.....	10 ft. 7 in.	x	6 ft. 0 in.	x	8 ft. 6 in.
Bathroom	.....	6 ft. 0 in.	x	6 ft. 0 in.	x	8 ft. 0 in.
Bedroom	.....	17 ft. 0 in.	x	9 ft. 9 in.	x	8 ft. 0 in.
Bedroom	.....	11 ft. 0 in.	x	9 ft. 4 in.	x	8 ft. 0 in.

A house of Type A. is recommended for four persons, allowing for 4 adults in bedroom space about 536.5 cubic feet each.

TYPE B.

HOUSE WITH THREE BEDROOMS. 760 superficial feet.

Living Room	.....	13 ft. 0 in.	x	13 ft. 0 in.	x	8 ft. 6 in.
Scullery	.....	9 ft. 0 in.	x	8 ft. 9 in.	x	8 ft. 6 in.
Bathroom	.....	9 ft. 0 in.	x	4 ft. 6 in.	x	8 ft. 6 in.
Bedroom	.....	17 ft. 0 in.	x	9 ft. 9 in.	x	8 ft. 0 in.
Bedroom	.....	12 ft. 4 in.	x	8 ft. 6 in.	x	8 ft. 0 in.
Bedroom	.....	9 ft. 1 in.	x	8 ft. 3 in.	x	8 ft. 0 in.

Type B. is recommended as suitable for five persons, allowing bedroom space alone for 5 adults, an average of 552 cubic feet per person.

Houses Built.—The Corporation have completed to date 4,430 houses.

The following shows the Housing Acts under which these houses have been constructed:—

1923 Act.—950 houses were built by private enterprise and subsidised by the Council.

1923-1924-1925 Act.—171 houses have been built by direct labour:—

5	roomed	house	of	950	superficial	feet	for	£550
4	„	„	„	900	„	„	„	£489
3	„	„	„	812	„	„	„	£320

1924 Act.—The largest development has been under the 1924 Act when reasonable rents were possible owing to the subsidy from the Ministry of £7 10s. od. per house for 40 years.

Spark Farm Estate	has	200	houses;
Red Machine	„	356	„
Newcastle Road	„	232	„
Ford Hall	„	1,004	„

This last development has an area of 135 acres, is set out in a surround of magnificent trees, and constitutes one of the prettiest estates in the country.

1925 Act.—126 houses have been built at Grangetown and 60 at Southwick for purpose of re-housing from unhealthy areas.

For re-housing displaced tenants owing to the construction of the Deep Water Quay:—

Three-storied flats at Rickaby St. have housed 18 families.
Temporary wooden bungalows..... „ „ 14 „
and 133 houses at Grangetown have housed the remainder.

Rents.—The rents of Council houses are as follows:—

	Rent.	Rates.	Water.	Total.
Three-roomed house ...	7/6d.	2/11d.	10d.	11/3d.
Four- „ „ ...	8/6d.	3/7d.	1/-	13/1d.

Under the 1930 Act for re-housing persons from Clearance Areas a subsidy of £2 5s. od. for each person displaced will enable similar houses to be let at an inclusive rental of 7/6d. for a three-roomed house and 7/11d. for a four-roomed house.

Scheme in Hand.—Under the 1930 Housing Act the following programme is in hand:—

Commercial Road.....	4-roomed houses.....	84
Marley Pots.....	3 & 4 „ „	154
Westmoor Road.....	2 & 3 „ „	24
Carley Hill.....	3 „ „	22
Making a total of.....		<u>284</u>

Flats.—The question as to whether working-class people should be housed in flats has always been a controversial point.

At the Harrison Buildings, in the East-end of the town, we have three-storied flats of 204 rooms, comprising 36 three-room flats and 48 two-room flats. At the recently erected Rickaby Street flats we have three-storied flats comprising 9 three-roomed flats and 9 two-roomed flats.

The Ministry of Health considers that in London and some of the larger provincial cities where the cost of land is almost prohibitive, the building of flats is the only practical means of housing. In less populous areas small houses give that privacy which is desirable when a man has finished a day's work and which a flat cannot give.

As regards the comparative cost of production owing to the greater strength of foundations and walls required in storied flats, small houses to accommodate the same number of persons can be built at a cheaper cost. To house people near to their work flats are obviously practicable instead of their living in housing estates some miles distant; but flats with their badly ventilated courts and yards into which the sun seldom penetrates are not ideal places for the development of children.

It is as well to remember that the real need for re-housing is concerned with the tragedy of children living in an unhealthy environment.

Overcrowding.—The question of overcrowding is one which is closely related to the need for houses. There are two types—moral and sanitary.

The lack of separation of the sexes in growing children and the lack of a separate bedroom for parents is responsible to a very large extent for the comparatively low moral standard of slum dwellers. All future housing developments should aim at a bedroom for the parents and separate bedrooms for growing boys and girls in the family.

There are varying standards of sanitary overcrowding:—

(1) The Registrar-General's standard for the purpose of the Census—but not of the Censor—is that a house is overcrowded when there are more than two adults for each room. A room is defined as a bedroom, a living room or kitchen.

My own opinion is that this standard cannot be taken as one for sanitary overcrowding inasmuch as if people have to sleep in a living-room and kitchen, then that house is overcrowded.

(2) Bye-laws for houses let in lodgings require that sleeping rooms should contain 400 cubic feet per adult and 200 cubic feet for each child.

(3) The Model Bye-laws issued under Section 8 of the Housing Act of 1930 define requirements in terms of square feet instead of cubic capacity, and increase that floor space if the height of the room falls below 8 feet. Further, the Ministry observe that instead of treating children under 10 as not requiring as much air space as an adult, they adopt a more physiological outlook and say that a child of school age—which is 5 to 14—requires as much air space as an adult. The Bye-law therefore reads that a sleeping room shall allow 40 square feet of floor space for each person of school age or more, and 30 square feet of floor space for each person of less than school age.

A Slum House.—I have often noticed that at various Inquiries held by Inspectors of the Ministry upon housing matters that those opposed to applications for slum clearance

make much comment upon the fact that there is no official or legal definition of a slum house. I would suggest that this difficulty can be most readily overcome by referring to Volume I of the manual of the Ministry of Health on Unfit Houses and Unhealthy Areas. A standard of fitness is laid down which should be regarded as the minimum in connection with existing houses, a house the condition of which falls below this minimum constitutes a slum house.

The minimum standard is:—

- (1) Free from serious dampness.
- (2) Satisfactorily lighted and ventilated.
- (3) Properly drained and provided with adequate sanitary conveniences and with a sink and suitable arrangements for the disposal of slop water.
- (4) In good general repair.
- (5) A satisfactory water supply.
- (6) Adequate washing accommodation.
- (7) Adequate facilities for preparing and cooking food.
- (8) A well-ventilated store for food.

Slum Clearance.—The present policy of the Ministry is that houses shall only be built for the purpose of re-housing persons displaced under Clearance Orders. While no one can seriously contend that this is not eminently desirable, it increases enormously the already difficult problem of lessening the overcrowding in houses outside clearance schemes and also prevents the re-housing of a large number of overcrowded persons whose names have been on the waiting list for Council houses for several years.

Re-Housing.—Towards the end of the year the beginning of the re housing of tenants from Clearance Areas commenced, and this in itself raised a new problem in Public Health, namely, the measures to be taken to prevent the infestation of new Council houses by tenants from verminous slum houses.

The following is a report submitted to the Health Committee in December, 1933:—

MEMORANDUM FROM THE MEDICAL OFFICER OF HEALTH
ON THE DISINFESTATION OF VERMINOUS CLOTHING,
BEDDING, AND FURNITURE FROM CLEARANCE AREAS.

It is important to safeguard new Council Houses from infestation by vermin in the transfer of tenants from Slum Areas to new houses,

Some method should be devised by means of which the clothing and bedding is disinfected by steam and the furniture disinfected by some method which will destroy vermin and their eggs without damaging the furniture.

The steam disinfection of the clothing and bedding can be carried out at the Borough Sanatorium.

The disinfestation of the furniture can be carried out by the following methods:—

(1) **CYANIDE FUMIGATION**:—Fumigation by Cyanide (Prussic Acid Gas) as is carried out in ships is the best known method of killing bugs and other vermin with their eggs.

This fumigation could be carried out either in a sealed furniture van or in suitable premises rendered gas tight.

This method would be costly and would require the services of men trained in cyanide fumigation. It could not be carried out by the present members of the Inspectorial Staff.

Cyanide Fumigation would cost £5 per family. Further, the furniture would be detained 24 hours.

(2) **FUMIGATION BY S.O.₂**:—In my opinion Sulphur Dioxide although an effective fumigating agent for vermin has little or no penetrating action, and has no effect on eggs.

Moreover, it tarnishes metal work, ruins leather upholstery, and does not improve woodwork.

Disinfestation should take place without any claim for compensation from tenants for destroying furniture.

For these reasons, I do not consider the use of Sulphur Dioxide suitable.

(3) **SOAP & WATER & PARAFFIN**:—Furniture and upholstery scrubbed thoroughly with soap and water and subsequently scrubbed with paraffin is the simplest way for performing an efficient disinfestation.

Creosote can with advantage be added to paraffin.

Paraffin penetrates crevices where bugs reside, and further, destroys the eggs.

I would suggest that this latter method is the one to be adopted.

PROCEDURE:—

Of the 266 tenants for removal it can be assumed that 200 will actually move to the new houses, and that 50 per cent. of those will require disinfecting.

In order that the houses may be cleared by January 13th, it will be necessary for the disinfestation of 8 tenants per day. The rate of disinfection is determined by the capacity of the steam disinfectors at the Sanatorium.

Briefly, the furniture should be scrubbed with soap and water and paraffin on the morning of the day fixed for removal.

The clean furniture would be placed in a removal van and taken to the new Council Houses.

Meanwhile the clothing and bedding would be removed to the Sanatorium for steam disinfection.

In the afternoon the tenants would be taken to the new Council House, which they would occupy with the clean furniture.

By this method will clean tenants with clean clothing, clean bedding and clean furniture occupy a clean house with the least expenditure of money to the Corporation for disinfestation and risk of claims for damage to furniture.

A. STUART HEBBLETHWAITE,
Medical Officer of Health.

Health Department,
27, Fawcett Street, Sunderland,
5th December, 1933.

The Committee decided to adopt the disinfestation by paraffin, soap, water and Izal. Inspectors visited every house in the Clearance Areas and reported whether the houses were verminous or not. Those which were clean were reported to the Estates Committee who allocated Council houses. With respect to those reported as infested, a letter was sent (a specimen of which is reproduced) warning the tenants that disinfestation would take place.

8th December, 1933.

Dear Sir/Madam,

A Council House has been allocated to you for occupation on Monday December 11th.

Your bedding, etc., will be collected at 9 a.m. for disinfection.

You should call at this office in Athenæum Buildings before Monday morning for soap and paraffin.

Your furniture will be removed free of cost, when cleansed, under the supervision of an Inspector.

The key for the Council House will only be handed over to you when the furniture has been cleansed.

Yours faithfully,

A. STUART HEBBLETHWAITE,
Medical Officer of Health.

The whole scheme worked with extraordinary smoothness and rapidity. Eight tenants per day were supervised by two Inspectors until all bedsteads and furniture were scrubbed to

their satisfaction with soap, water, paraffin and Izal, and, as far as could be ascertained, freed from bugs and their eggs. The furniture was then removed in covered vans to the new Council house, the bedding, which in the meantime had been going through the steam disinfector, being delivered at the same time.

A refuse van was available at the time of removal for the reception of material which was not worth disinfecting.

OBSERVATIONS:

(1) **Infestation.**—A good deal of press publicity was given at the suggestion of this scheme for disinfestation on the assumption that it was an over-estimate to state that half the houses in a slum area were verminous. At the end of our operations, of the 266 tenants for removal, 179 were actually removed to Council houses, and 103 of these required the furniture disinfested, the percentage thus being 57.5, which is slightly in excess of the 50 per cent. originally suggested.

(2) **Removals.**—Criticism, not unnaturally nor unexpectedly, arose in that families in verminous houses were removed with their goods free of charge while for tenants of very clean houses no such provision was made, thus putting a premium against cleanliness.

The law related to the duties and powers of Local Authorities in connection with verminous houses and verminous persons is contained in the Public Health Act, 1925. Under this Act a Local Authority may disinfect verminous articles and also verminous houses; but there is no provision made for such disinfestation in default.

In connection with the cleansing of verminous persons in default the Local Authority may appeal to the magistrates who may make an order for their removal to a Cleansing Station and their detention therein for the disinfestation of themselves and their clothing.

A knowledge of the life history of the bug shows that it does not live on the person or in the clothing except for the

purpose of, and for the duration of, feeding; therefore, there would be little object in applying for compulsory powers for removal of the person for the purpose of disinfestation.

Moreover, there is little object in putting into operation the Sections for dealing with verminous houses, for the simple reason that the houses are to be demolished.

Therefore, the only articles which require disinfestation are the infested bedsteads, cupboards, and upholstered furniture which harbour the bug and which are removed to the new house.

As disinfestation of these cannot be carried out if tenants object, the Section stating that the Local Authority may cause but giving no authority for the compulsory removal in default, the provision of disinfectants and permission for the removal of the disinfected furniture was given by the Committee in order that no objection would be raised to the freeing of the furniture from bugs.

The question was raised as to whether the Committee could refuse the allocation of a Council house to a tenant with verminous possessions.

As, under the Housing Act, a Council must provide alternative accommodation to tenants from Clearance Areas, they cannot refuse this accommodation even though the tenant refuses disinfestation.

(3) **Efficiency.**—The above procedure was carried out at the end of the year and although the method is much more simple than the disinfestation by gas, either Cyanide or Sulphur Dioxide, in hermetically sealed vans or rooms, the effect of the procedure appears to have been satisfactory. One month after occupation of a Council house by these tenants, Inspectors visited, and again three months after occupation and in 103 houses of tenants whose verminous furniture had been disinfected, in only five houses had bugs been seen. In one of these, three bugs had been seen in three months, and in four cases one bug had been caught. In all other instances the Inspectors

found the houses clean and no vermin had been seen. This period of three months had given any undestroyed eggs time to hatch out.

(4) **Cost.**—The cost of 103 removals was £81 4s. 9d., making an average cost of 15/9d. per family. The cost of the paraffin and disinfectants per family was negligible. In no instances was additional help required in the scrubbing of furniture; and the inspection was carried out by the two Housing Inspectors.

Conclusion.—No tenants should be removed from slum areas to Council houses without examination to discover the presence of vermin and their eggs. Measures should be taken to discover all materials which harbour bugs and those should be disinfested. Lastly, the cost of the disinfestation and removal is very little compared with the value to the Council of their property being rendered free from bug infestation.

During the year 543 houses were erected as compared with 507 for the previous year.

Under Section 17 of the Housing Act, 1930, 585 notices were served as against 957 in 1932, this decrease being attributable to concentration on the Clearance Areas.

Under Section 19, three Demolition Orders were served and under Section 20, two Closing Orders were issued with respect to basement or other tenements.

The following table shows the work carried out in the repair of property since the Housing Act, 1925, came into force:—

PROCEEDINGS UNDER SECTION 3 OF THE HOUSING ACT, 1925,
AND SECTION 17 OF THE HOUSING ACT, 1930.
YEARS 1925 TO 1933 INCLUSIVE.

Year.	Number of dwelling houses in respect of which notices were served requiring repairs.	Number of dwelling houses which were rendered fit after service of formal notices.		Number of dwelling houses in respect of which Closing Orders became operative in pursuance of declarations by Owners of intention to close.
		By Owners.	By Local Authority in default of Owners.	
1925	Nil.	Nil.	Nil.	Nil.
1926	4	4	Nil.	Nil.
1927	14	14	Nil.	Nil.
1928	214	186	28	4
1929	578	317	55	9
1930	828	647	44	5
1931	653	513	1	Nil.
1932	957	743	Nil.	Nil.
1933	585	642	1	Nil.
Totals	3833	3066	129	18

HOUSING STATISTICS FOR THE YEAR 1933.

Number of new houses erected during the year:—

(a) Total (including numbers given separately under (b)):—

1. By the Local Authority	276
2. By other Local Authorities	—
3. By other bodies or persons	267

(b) With State assistance under the Housing Acts:—

1. By the Local Authority:—

(a) For the purpose of Part 2 of the Act of 1925 —

(b) Built under the 1924 Act 82

(c) For other purposes (1930 Act) 194

2. By other bodies or persons 267

1. Inspection of dwelling-houses during the year:—

(1) (a) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts) 7710

(b) Number of inspections made for the purpose ... 11499

HOUSING STATISTICS FOR THE YEAR 1933.

(Continued).

(2) (a)	Number of dwelling-houses (included under sub-head (1) above) which were inspected and recorded under the Housing Consolidated Regulations, 1925	...	...	...	...	1953
(b)	Number of inspections made for the purpose	...				2338
(3)	Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	...	...	...	...	7
(4)	Number of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	...	...	...	...	1521
2	Remedy of defects during the year without service of formal notices:—					
	Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	...	...	...	...	3084
3.	Action under Statutory Powers during the year:—					
	A.—Proceedings under Sections 17, 18 and 23 of the Housing Act, 1930:					
	(1) Number of dwelling-houses in respect of which notices were served requiring repairs	...				585
	(2) Number of dwelling-houses which were rendered fit after service of formal notices:—					
	(a) By owners	...	...	...	...	642
	(b) By local authority in default of owners					1
	B.—Proceedings under Public Health Acts:					
	(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	...	...	...	...	3550
	(2) Number of dwelling-houses in which defects were remedied after service of formal notices:—					
	(a) By owners	...	...	...	...	3258
	(b) By local authority in default of owners					12
	C.—Proceedings under Sections 19 and 21 of the Housing Act, 1930:					
	(1) Number of dwelling-houses in respect of which Demolition Orders were made	...	...			3
	(2) Number of dwelling-houses demolished in pursuance of Demolition Orders	...	...	...		Nil.
	D.—Proceedings under Section 20 of the Housing Act, 1930:					
	(1) Number of separate tenements or underground rooms in respect of which Closing Orders were made	...	...	...	...	2
	(2) Number of separate tenements or underground rooms in respect of which Closing Orders were determined, the tenement or room having been rendered fit	...	...	...		Nil.

Number of Houses.—The number of houses in the town at the end of the year was approximately 31,586.

Overcrowding.—The number of notices served by the Department during the year was 94 (including 74 verbal intimations) compared with 109 notices last year. Again, overcrowding notices are not intensively followed up owing to lack of alternative accommodation but the service of these notices is undoubtedly valuable in gaining other accommodation for the tenants, if at all possible, on sympathetic grounds.

Proposed Clearance Areas.—Upon the instructions of Circular 1331 of the Ministry of Health, a programme has been prepared showing the list of Areas in which clearance is necessary, with information as to the number of houses to be demolished in each area and the number of inhabitants.

This programme is drawn up, as far as practicable, on the basis of clearing all areas that require clearance not later than 1938.

The proposed Clearance Areas number 36 and cover 9 Wards in the Borough, as follows:—

Central Ward.
Sunderland Ward.
Monkwearmouth-Shore Ward.
Southwick Ward.
Monkwearmouth Ward.
Bridge Ward.
East Ward.
St. Michael's Ward.
Deptford Ward.

These 36 Areas deal with 1,263 houses in which are accommodated 2,747 tenants comprising 11,202 persons.

PRIVATE FAMILIES.
CLASSIFIED BY SIZE OF FAMILY, ROOMS OCCUPIED, AND DENSITY OF OCCUPATION IN THE
COUNTY BOROUGH OF SUNDERLAND FROM THE 1931 CENSUS.

Number of Persons in Family	Number of Private Families Occupying.									Total Private Families	Popul- ation in Private Families	Rooms Occupied	Density of Occupation,				
													Average No of Persons per room	Population at following densities of occupation (Persons per Room.)			
														Over 3	3 and over 2	2 and over 1½	1½ and over 1
1 Room	1664	869	466	250	100	75	13	6	3443	3443	6971	0.49	...	...	...	...
2	1380	2345	2012	1414	697	590	112	38	8588	17176	26338	0.65	...	...	2760	...
3	1182	2489	2744	1933	870	749	165	71	10203	30609	33422	0.92	...	3546	...	7467	
4	775	2118	2428	1647	857	691	154	78	8748	34992	29783	1.17	...	...	8472	9712
5	448	1635	1744	1200	510	483	126	89	6235	31175	21501	1.45	...	...	8720	6000
6	240	1160	1169	749	325	301	91	46	4081	24486	13918	1.76	...	...	7014	6444
7	125	715	761	462	202	153	41	28	2487	17409	8337	2.09	...	...	3234	2002
8	49	395	450	252	86	70	22	17	1341	10728	4491	2.39	...	...	2704	560
9	14	183	204	161	50	42	8	14	676	6084	2402	2.53	...	...	450	414
10	4	82	89	68	16	20	5	5	289	2890	1035	2.79	...	...	270	140
11	1	18	33	35	7	7	5	3	109	1199	435	2.76	...	...	77	66
12	...	6	17	11	7	4	2	1	48	576	194	2.97	...	...	48	36
13	...	2	3	5	...	2	1	3	16	208	100	2.08	...	...	13	13
14	...	1	...	...	...	2	1	...	4	56	23	2.43	...	...	14	...
and over	...	...	...	2	1	1	1	1	6	91	43	2.12	...	...	15	16
2 Persons and over.	4218	11149	11654	7939	3628	3115	734	394	42831	177679	142022	1.25	...	...	33791	32870
Total Private Families.	5882	12018	12120	8189	3728	3190	747	400	46274	...	...	...	...	...	...	...
Population in Private Families.	16194	47575	50427	33950	14920	12890	3230	1936	...	181122	...	1.22	...	...	33791	32870
Rooms Occupied.	5882	24036	36360	32756	18640	20403	6301	4615	...	...	148993	...	...	...	...	...

APPENDIX.

TABLE 1.
VITAL STATISTICS OF WHOLE DISTRICT DURING 1933 AND PREVIOUS YEARS.

YEAR.	Population Estimated to Middle of Each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.			
		Un- corrected Number	NETT.		Number	Rate	Of Non- residents Register- ed in the District.	Of Resi- dents not Register- ed in the District.	Under 1 Year of age.		At All Ages.	
			Number.	Rate.					Number.	Rate per 1,000 Nett Births.	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1922	162900	4644	4662	28·6	2643	16·2	222	134	490	105	2555	15·7
1923	164000	4001	4032	24·6	2372	14·4	200	98	395	98	2270	13·8
1924	165100	4257	4285	25·9	2608	15·8	241	119	433	101	2486	15·0
1925	166000	4064	4106	24·7	2699	16·3	269	108	483	118	2538	15·3
1926	163800	3807	3830	23·4	2408	14·7	245	99	387	101	2262	13·8
1927	162700	3616	3646	22·4	2387	14·6	248	116	342	94	2255	13·8
1928	*184700	4171	4198	23·6	2576	14·4	247	73	367	87	2402	13·5
1929	184000	4078	4111	22·3	3308	17·9	263	83	448	109	3128	17·0
1930	184000	4212	4242	23·1	2696	14·6	273	62	330	78	2485	13·5
1931	187600	4055	4087	21·8	2892	15·4	262	71	405	99	2701	14·4
1932	187970	3954	3982	21·4	2808	14·9	300	68	380	95	2576	13·7
1933	187400	3682	3703	19·8	2774	14·8	287	52	331	89	2539	13·5

AREA OF DISTRICT IN
ACRES (LAND AND
INLAND WATER)

6299

* Borough extended 1st April, 1928.

TOTAL POPULATION AT ALL AGES AT THE 1931 CENSUS 185,870.

TABLE II.

CASES OF INFECTIOUS DISEASES NOTIFIED DURING THE YEAR 1933.

NUMBER OF CASES NOTIFIED.		TOTAL CASES NOTIFIED IN EACH WARD.														Total Cases re-moved to Hos-pital.									
At All Ages.	At Ages—Years.						Bishopwearmouth	Bridge.	Central.	Colliery.	Deptford.	East.	Fulwell.	Hendon	Monkwearmouth.		Monkwearmouth Shore.	Pallion.	Park.	Roker.	St. Michael's.	Southwick	Sunderland.	Thornhill.	West.
	Un-der 1 year.	1 and under 5 yrs.	5 and under 15 yrs.	15 and under 25 yrs.	25 and under 45 yrs.	45 and under 65 yrs.	65 yrs. and up-wards																		
Smallpox
Diphtheria (including Mem-branous Croup) ..	73	4	24	28	12	5	1	7	2	1	1	1	2	8	8	4	1	3	5	6	7	66
Erysipelas	168	5	7	10	16	49	60	21	..	5	4	1	14	6	8	13	11	3	12	13	6	10	18	31	
Scarlet Fever ..	1518	13	442	943	87	32	1	..	68	114	36	59	90	69	127	114	48	1	68	72	119	89	105	802	
Enteric Fever ..	7	..	..	..	1	4	2	..	..	..	..	1	..	..	..	1	1	1	2	..	..	1	1	6
Puerperal Fever ..	15	..	..	..	5	10	..	..	..	1	1	..	1	1	..	2	1	..	1	1	2	..	1	8
Puerperal Pyrexia ..	28	..	..	..	11	17	..	..	2	1	..	1	1	2	..	6	1	1	2	2	..	2	3	9
Cerebro-Spinal Meningitis ..	37	5	11	13	5	1	2	..	2	..	6	..	3	1	..	2	..	1	1	1	7	5	4	37	
Poliomyelitis	2	..	2	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..
Ophthalmia Neonatorum ..	19	19	..	..	..	..	..	..	2	..	..	..	1	..	1	1	2	..	1	1	1	1	4	1
Encephalitis Lethargica ..	6	..	..	..	1	3	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	2	..	1
Malaria	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Dysentery	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	2259	78	1476	700	5	..	..	..	60	171	89	40	100	72	146	204	95	96	98	288	162	112	116	47
Pneumonia (Acute Primary) ..	656	64	258	171	49	65	31	18	16	27	60	16	36	18	40	32	45	19	24	31	65	15	82	26	
Pneumonia (Acute Influenzal)	144	7	25	21	19	43	23	6	7	8	17	3	12	6	4	6	10	4	7	4	14	5	11	5	
Pulmonary Tuberculosis ..	289	1	17	36	84	109	41	1	8	12	17	10	21	6	18	17	13	12	16	29	31	13	12	..	
Other forms of Tuberculosis ..	186	3	32	74	33	33	11	..	7	14	12	2	17	12	9	16	11	4	10	15	8	9	6	..	
	5409	199	2294	1996	329	372	172	47	182	309	328	106	297	185	297	431	316	193	244	466	418	266	370	..	

3.

TABLE III.

CAUSES OF AND AGES AT DEATH DURING THE CALENDAR YEAR 1933.

CAUSES OF DEATH.	Sex.	Nett Deaths at the subjoined ages of "Residents" whether occurring within or without the District.											
		ALL AGES.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 35 years.	35 and under 45 years.	45 and under 55 years.	55 and under 65 years.	65 and under 75 years.	75 and over
1. Typhoid and paratyphoid Fevers	M	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
	F	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2. Measles	M	12	3	6	3	.....	.....	.....	.....	.....	.....	.....	.....
	F	11	1	3	6	1	.....	.....	.....	.....	.....	.....	.....
3. Scarlet Fever	M	14	1	2	7	3	.....	.....	.....	1	.....	.....	.....
	F	12	1	1	7	3	.....	.....	.....	.....	.....	.....	.....
4. Whooping Cough	M	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
	F	3	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....
5. Diphtheria	M	2	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
	F	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
6. Influenza	M	50	7	2	3	4	1	3	5	6	7	10	2
	F	39	4	1	1	5	2	4	5	1	3	7	6
7. Encephalitis Lethargica ..	M	4	.....	.....	.....	.....	.....	1	.....	.....	1	2	.....
	F	4	.....	.....	.....	.....	.....	1	.....	2	.....	1	.....
8. Cerebro-Spinal Meningitis	M	17	3	4	1	4	2	1	.....	2	.....	.....	.....
	F	14	5	4	1	4	.....	.....	.....	2	.....	.....	.....
9. Tuberculosis of respiratory system ..	M	95	1	2	3	4	29	26	13	12	4	1	.....
	F	88	.....	.....	1	10	28	22	16	5	6	.....	.....
10. Other Tuberculous Diseases	M	19	1	3	1	7	5	1	1	.....	.....	.....	.....
	F	20	.....	1	2	5	4	4	3	1	.....	.....	.....
11. Syphilis	M	13	5	.....	.....	.....	.....	.....	3	3	1	1	.....
	F	7	2	.....	.....	.....	.....	1	2	2	.....	.....	.....
12. General paralysis of the insane, tabes dorsalis ..	M	8	.....	.....	.....	.....	.....	1	2	4	1	.....	.....
	F	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13. Cancer, malignant disease.	M	131	.....	.....	.....	.....	1	6	8	16	45	35	20
	F	126	.....	.....	1	.....	1	3	7	26	34	32	22
14. Diabetes	M	12	.....	.....	.....	.....	.....	1	.....	1	2	7	1
	F	11	.....	.....	.....	.....	1	.....	.....	1	1	5	2
15. Cerebral Hæmorrhage, &c.	M	40	.....	.....	.....	.....	.....	.....	1	4	10	15	10
	F	77	.....	.....	.....	.....	.....	1	1	6	15	28	26
16. Heart Diseases	M	202	.....	.....	.....	.....	4	5	10	26	33	74	50
	F	233	.....	.....	.....	2	3	4	13	11	44	58	98
17. Aneurysm	M	5	.....	.....	.....	.....	.....	.....	.....	1	3	1	.....
	F	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18. Other circulatory diseases.	M	76	.....	.....	.....	.....	.....	.....	1	2	18	24	31
	F	78	.....	.....	.....	.....	.....	.....	1	3	6	29	39
19. Bronchitis	M	67	11	6	1	1	.....	.....	3	9	6	15	15
	F	67	9	1	.....	2	1	.....	.....	1	7	17	29
20. Pneumonia (all forms) ..	M	94	29	10	11	12	7	5	3	2	8	5	2
	F	67	19	12	7	7	2	1	3	5	7	2	2
21. Other Respiratory Diseases	M	8	.....	1	.....	.....	.....	1	1	2	1	1	1
	F	7	1	.....	.....	.....	.....	.....	.....	1	1	1	3
22. Peptic ulcer	M	14	.....	.....	.....	.....	1	.....	3	5	5	.....	.....
	F	2	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....
23. Diarrhœa, &c.	M	48	35	8	3	1	.....	.....	.....	.....	.....	.....	1
	F	30	27	2	.....	.....	.....	.....	1	.....	.....	.....	.....
24. Appendicitis	M	7	.....	.....	1	3	2	.....	1	.....	.....	.....	.....
	F	3	.....	.....	.....	2	.....	.....	1	.....	.....	.....	.....
25. Cirrhosis of Liver	M	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	F	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
26. Other diseases of liver etc.	M	2	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
	F	9	.....	.....	.....	.....	.....	1	1	2	1	2	2
27. Other digestive diseases..	M	12	2	.....	2	1	.....	1	.....	2	2	1	1
	F	18	.....	1	.....	1	.....	2	2	2	5	3	2
28. Acute & Chronic Nephritis	M	63	.....	.....	.....	2	3	1	3	7	17	23	12
	F	61	1	.....	.....	2	1	5	6	15	13	11	7
29. Puerperal Sepsis	F	12	.....	.....	.....	.....	5	5	2	.....	.....	.....	.....
30. Other puerperal diseases..	F	10	.....	.....	.....	.....	1	3	5	1	.....	.....	.....
31. Congenital Debility, Premature Birth, Malformation, etc.	M	66	66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	F	74	74	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32. Senility	M	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	14
	F	39	.....	.....	.....	.....	.....	.....	.....	.....	1	8	30
33. Suicide	M	20	.....	.....	.....	.....	1	3	2	4	6	4	.....
	F	6	.....	.....	.....	.....	.....	.....	2	3	1	.....	.....
34 Other violence	M	57	.....	1	2	7	4	5	6	2	9	9	12
	F	45	2	1	3	6	1	1	1	2	4	10	14
35. Other Defined Diseases .	M	91	12	1	5	4	7	3	10	15	8	15	11
	F	82	8	4	4	5	4	7	12	10	10	7	11
36. Causes ill-defined or unknown	M	2	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....
	F	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
TOTALS	M	1279	176	47	45	53	67	65	76	126	189	251	184
	F	1260	155	32	36	54	56	65	86	100	161	221	294

4.

TABLE IV.

INFANT MORTALITY, YEAR 1933.

Nett Deaths from stated causes at various ages under 1 year of age.

Cause of Death.	Under 1 week.	1-2 weeks.	2-3 weeks.	3-4 weeks.	Total under 1 month.	1-3 months.	3-6 months.	6-9 months.	9-12 months.	Total Deaths under 1 year
Influenza .. .. .	..	..	..	..	..	1	3	3	4	11
Chicken-pox .. .. .	..	..	..	..	..	..	..	..	..	..
Measles	1	..	..	..	1	..	..	2	1	4
Scarlet Fever.. .. .	..	..	..	..	..	..	..	..	2	2
Diphtheria and Croup ..	..	..	..	..	..	..	..	..	..	..
Whooping-cough .. .. .	..	..	..	1	1	..	..	..	..	1
Diarrhoea .. .. .	..	..	2	..	2	1	1	2	..	6
Enteritis .. .. .	..	..	..	4	4	9	18	15	10	56
Tuberculous Meningitis ..	..	..	..	..	..	..	..	..	..	..
Abdominal Tuberculosis ..	..	..	..	..	..	..	1	..	..	1
Other Tuberculous Disease	..	..	..	..	..	..	..	..	1	1
Congenital Malformations..	5	2	1	1	9	1	2	1	2	15
Premature Birth	63	10	5	3	81	2	..	..	1	84
Atrophy, Debility and Marasmus	3	..	5	3	11	3	8	2	..	24
Atelectasis	8	1	1	..	10	..	..	..	1	11
Injury at Birth	1	..	..	..	1	..	..	..	..	1
Erysipelas .. .. .	..	..	..	..	..	..	..	..	..	..
Syphilis	1	..	..	1	2	3	2	..	..	7
Rickets .. .. .	..	..	..	..	..	..	..	..	..	..
Meningitis (<i>not Tuberculous</i>)	..	..	..	..	..	..	1	1	4	6
Convulsions	2	..	..	..	2	1	..	..	..	3
Gastritis .. .. .	..	..	..	..	..	1	1	..	..	2
Laryngitis .. .. .	..	..	..	..	..	..	..	..	..	..
Bronchitis .. .. .	..	..	1	2	3	6	6	2	3	20
Pneumonia .. .. .	..	1	..	1	2	8	13	19	6	48
Suffocation, overlying..	1	..	1	..	2	..	..	..	..	2
Other causes	10	1	2	1	14	1	6	3	2	26
Totals	95	15	18	17	145	37	62	50	37	331

